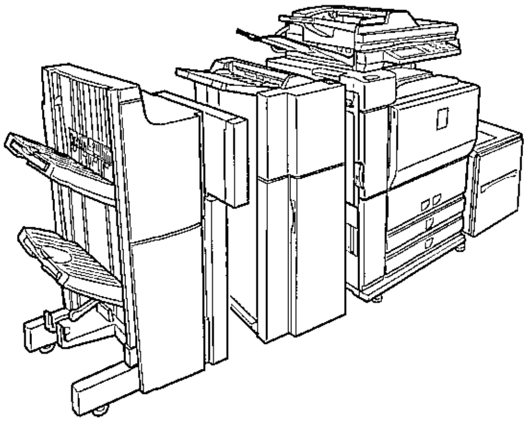
SHARP SERVICE MANUAL

CODE: 00ZAR700//F1E

DIGITAL LASER COPIER/PRINTER
DIGITAL MULTIFUNCTIONAL SYSTEM



AR-M550N/M550U
AR-M620N/M620U
MODEL AR-M700N/M700U

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Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

This document has been published to be used
for after sales service only.
The contents are subject to change without notice.

CAUTION

This product is a class 1 laser product that complies with 21CFR 1040 of the CDRH standard and IEC825. This means that this machine does not produce hazardous laser radiation. The use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This laser radiation is not a danger to the skin, but when an exact focusing of the laser beam is achieved on the eye's retina, there is the danger of spot damage to the retina.

The following cautions must be observed to avoid exposure of the laser beam to your eyes at the time of servicing.

1) When a problem in the laser optical unit has occurred, the whole optical unit must be exchanged as a unit, not as individual parts.
2) Do not look into the machine with the main switch turned on after removing the developer unit, toner cartridge, and drum cartridge.
3) Do not look into the laser beam exposure slit of the laser optical unit with the connector connected when removing and installing the optical system.
4) The middle frame contains the safety interlock switch.

   Do not defeat the safety interlock by inserting wedges or other items into the switch slot.

CLASS 1
LASER PRODUCT

LASER KLASSE 1

Wave length: 785 nm $^{+10\ \text{nm}}_{-15\ \text{nm}}$

Pulse times

North America:	55 cpm model (3.1 µs ± 3.1 ns)/7 mm
	62 cpm model (3.1 µs ± 3.1 ns)/7 mm
	70 cpm model (2.7 µs ± 2.7 ns)/7 mm
Europe:	55 cpm model (3.7 µs ± 3.7 ns)/7 mm
	62 cpm model (3.7 µs ± 3.7 ns)/7 mm
	70 cpm model (3.2 µs ± 3.2 ns)/7 mm

Output power: Max 0.8 mW

CAUTION

INVISIBLE LASER RADIATION,
WHEN OPEN AND INTERLOCKS DEFEATED.
AVOID EXPOSURE TO BEAM.

VORSICHT

UNSICHTBARE LASERSTRAHLUNG,
WENN ABDECKUNG GEÖFFNET UND
SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT.
NICHT DEM STRAHL AUSSETZEN.

VARO !

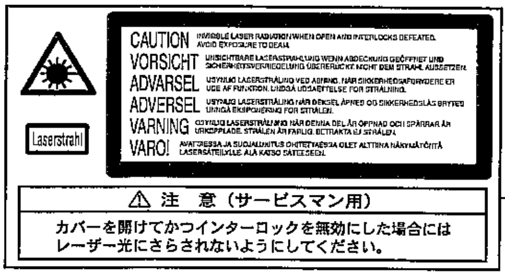
AVATTAESSA JA SUOJALUKITUS
OHITETTAESSA OLET ALTTIINA
NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ
KATSO SÄTEESEEN.

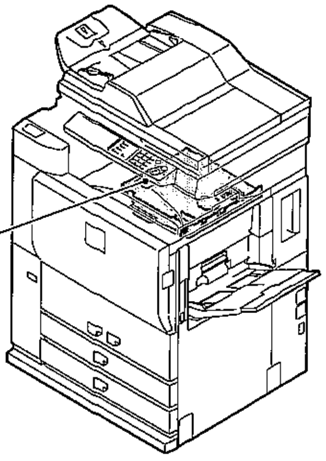
ADVARSEL

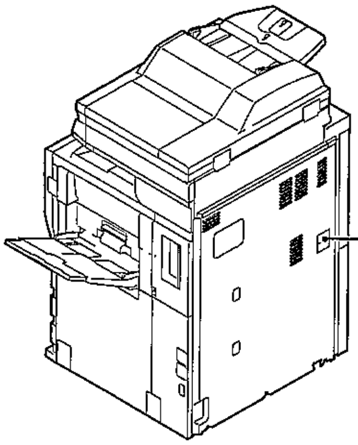
USYNLIG LASERSTRÅLNING VED ÅBNING, NÅR
SIKKERHEDSBRYDERE ER UDE AF
FUNKTION. UNDGÅ UDSAETTELSE FOR
STRÅLNING.

VARNING !

OSYNLIG LASERSTRÅLNING NÄR DENNA DEL
ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD.
BETRAKTA EJ STRÅLEN. – STRÅLEN ÄR
FARLIG.


Laserstrahl
CAUTION INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
VORSICHT
ADVARSEL
ADVERSEL
VARNING
VARO!
⚠ 注　意（サービスマン用）
カバーを開けてかつインターロックを無効にした場合には
レーザー光にさらされないようにしてください。





CLASS 1
LASER PRODUCT

LASER KLASSE 1

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[1] OUTLINE

1. Main Features

(1) Single Pass Duplex Scanner

- Max. 76 cpm for duplex scanning
- Best-in-class 150-sheet feeder

(2) Security Solution

Data encryption + data clear with random number

- Network security

(3) New Toner

- Higher density/Finer particles

(4) Inner Output

- Separate copy output pages from printer output pages

(5) Enhance the solutions such as document filing and other features.

(6) Design for High Reliability

- Robust frame designed by highly accurate CAE analysis

(7) Improved Performance

- Network Tandem Copy/Print
- High-speed Processor
- New high-speed ASIC

(8) Fax feature

For replacement of mid/low speed devices (up to area)

(9) Large Capacity Finisher

Finisher capacity: 4,000-sheet

2. Features

A. High reliability

(1) Improved Image Quality/Paper Transport

Full-Grip Path Design

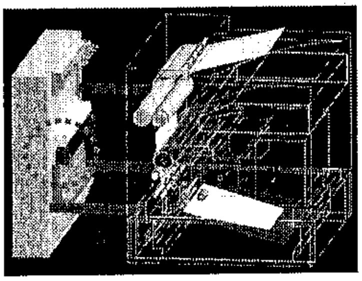
Stable paper feeding realized by rollers that firmly grip paper

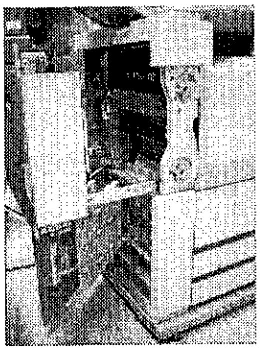
Small-Diameter Belt Transfer System

With reduced effect to paper types, drum paper release is stabilized and transfer efficiency is improved

Easier Paper Jam Fixation with Open Paper Path

Jammed paper on vertical paper path can be easily removed by opening the left side cover, which shortens time to fix paper jam





(2) Strengthened Frame Structure

Highly Rigid Frame

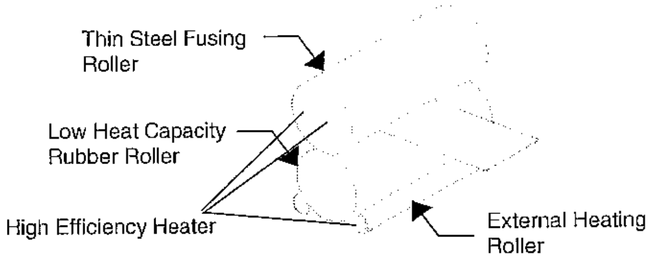
Improved stability with less machine distortion, and both rigidity and lightweight been achieved.

(3) Energy Saving with Unique External Heat Roller Fusing System

Newly Developed External Heating System

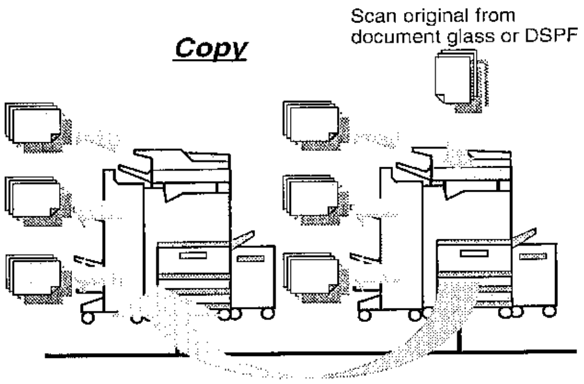
1) High reliability with stabilized fusing ability
2) Shortened warm up time before start copying
3) Achievement of energy efficiency that clears 2006 Rationalization in Energy Use Law

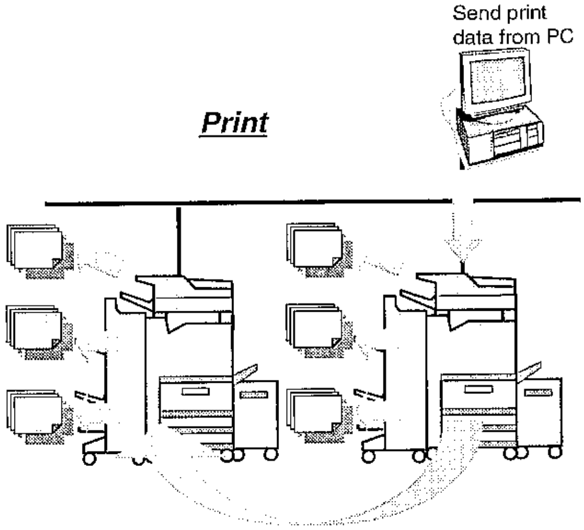
External Heat Roller Fusing System



B. Network tandem

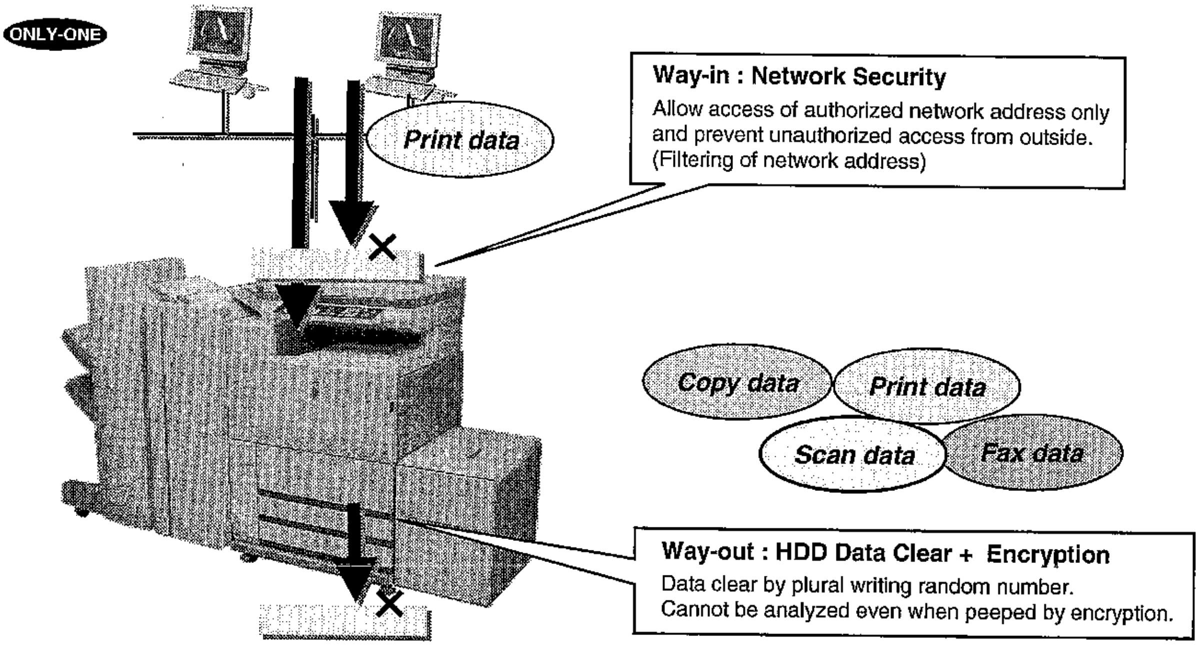
With Network tandem function, users can output one job on two network connected engines. Productivity of large-volume copying/printing can be dramatically improved by high-speed output of up to 110cpm (55cpm model), 124cpm (62cpm model) and 140cpm (70cpm model)





NOTE: Users can use the function simply by connecting the engines to network. This means no Tandem Kit (Connection cable) necessary.
For N model, only optional Printer Expansion Kit is required.

C. 2-Way Security Solution


ONLY-ONE
Print data
Copy data
Print data
Scan data
Fax data

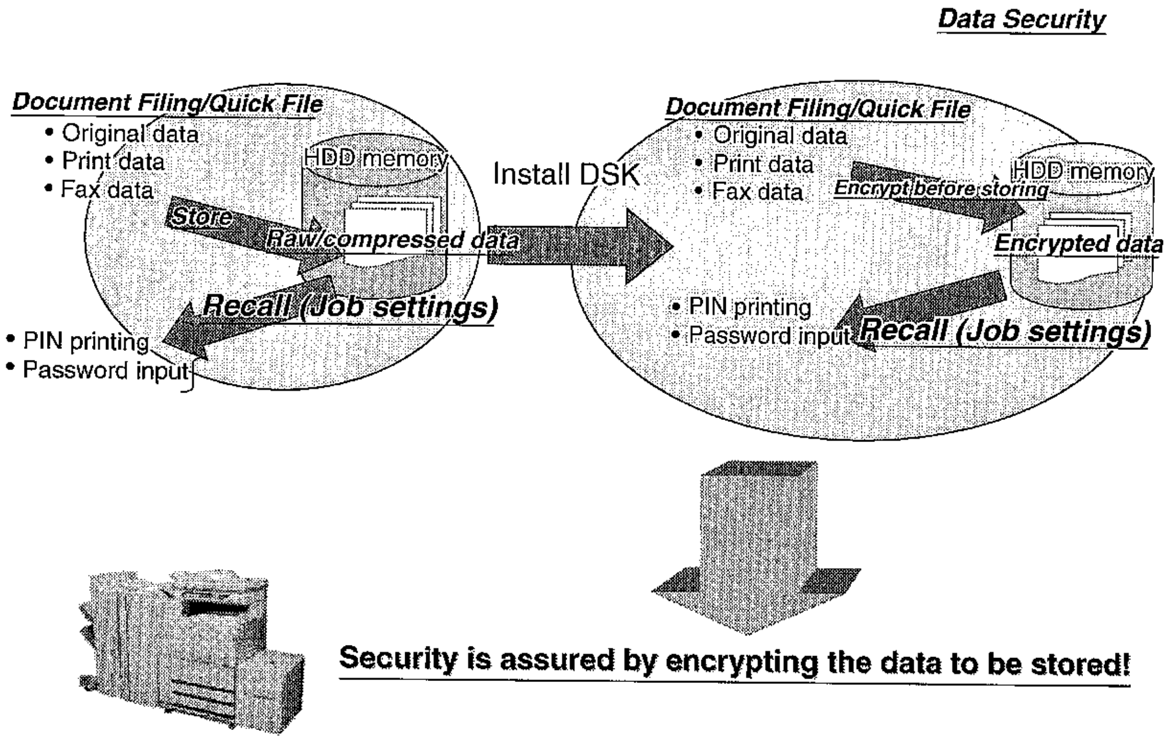
Way-in : Network Security

Allow access of authorized network address only and prevent unauthorized access from outside. (Filtering of network address)

Way-out : HDD Data Clear + Encryption

Data clear by plural writing random number.
Cannot be analyzed even when peeped by encryption.

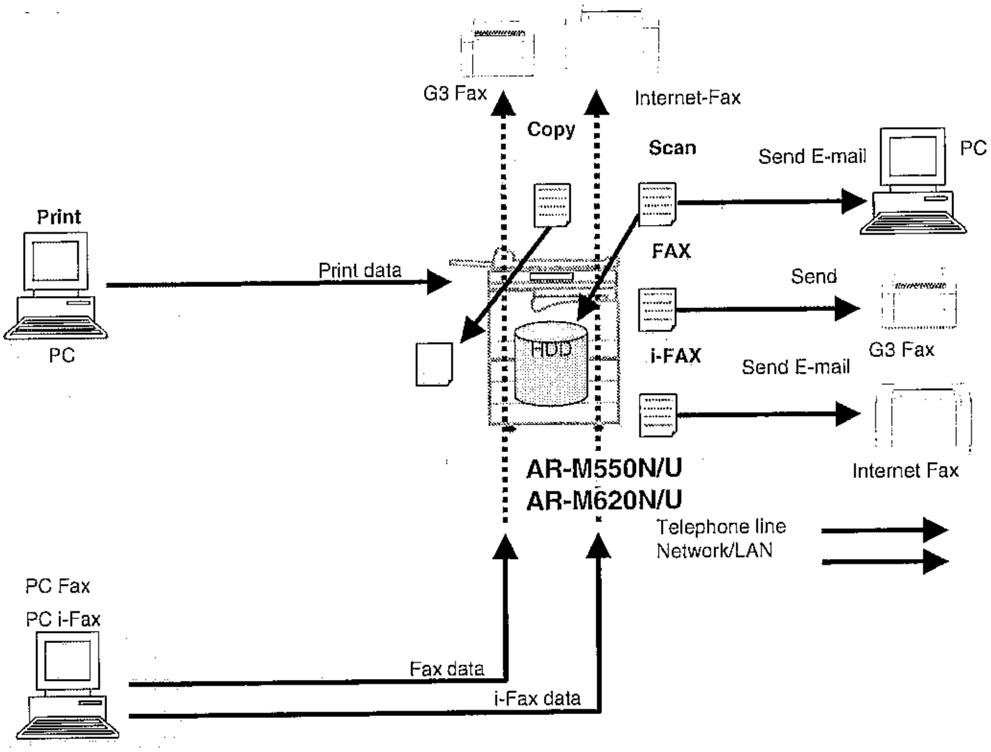
(1) Data Security coexisting with Document Filing


Data Security
Document Filing/Quick File
• Original data
• Print data
• Fax data
HDD memory
Store
Raw/compressed data
Recall (Job settings)
• PIN printing
• Password input
Install DSK
Document Filing/Quick File
• Original data
• Print data
• Fax data
HDD memory
Encrypt before storing
Encrypted data
• PIN printing
• Password input
Recall (Job settings)

Security is assured by encrypting the data to be stored!

D. Document Filing

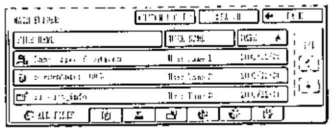
Document filing is a function that enables users to share and reuse data stored in the engine's HDD by digitalizing various information sent/scanned from printer, fax, PC or MFP that are connected by network.


G3 Fax
Internet-Fax
Copy
Scan
Send E-mail
PC
Print
Print data
PC
FAX
Send
G3 Fax
HDD
i-FAX
Send E-mail
Internet Fax
AR-M550N/U
AR-M620N/U
Telephone line
Network/LAN
PC Fax
PC i-Fax
Fax data
i-Fax data

PC-Fax is like printing Word data etc. onto fax paper.

<Document Filing initial screen>

<List of data stored in Main folder>



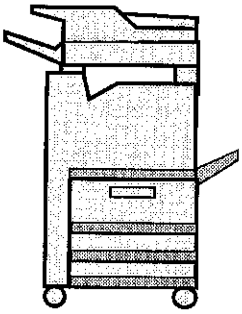
⚠ : Feb. 9 2004

[2] CONFIGURATION

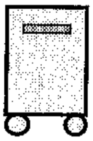
1. Main unit and option lineup

(1) Main unit lineup

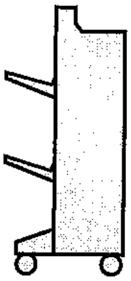
Model name	Composition
⚠ AR-M550U/M620U/M700U	Copier model
AR-M550N/M620N/M700N	Network printer model



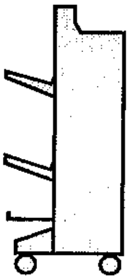
(2) Option lineup



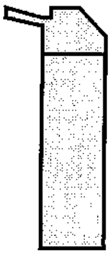
AR-LC6/Large capacity tray



AR-F15/Finisher



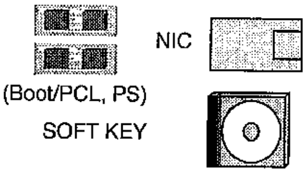
AR-F16/Saddle stitch finisher



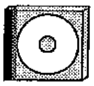
AR-CF2/Inserter

AR-PN2A/B/C/D / Punch unit

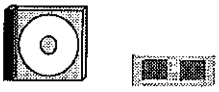
⚠



AR-P19/Printer expansion kit



AR-PK5/PS3 expansion kit

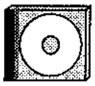


AR-PF1/Barcode font kit

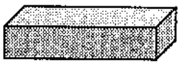
⚠

(Boot/PCL, PS)
SOFT KEY

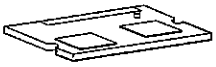
AR-FR11/Data security kit



AR-NS3/Network scanner expansion kit



AR-FX8/ Facsimile expansion kit*1



AR-MM9/FAX expansion memory(8MB)*1

AR-U11M/Sharpdesk 1 license kit
AR-U15, AR-U15M/Sharp desk 5 license kit
AR-U1AM/Sharpdesk 50 license kit
AR-U1BM/Sharp desk 100 license kit

⚠ *1: North America, Europe, Australia, New Zealand, Singapore, Taiwan

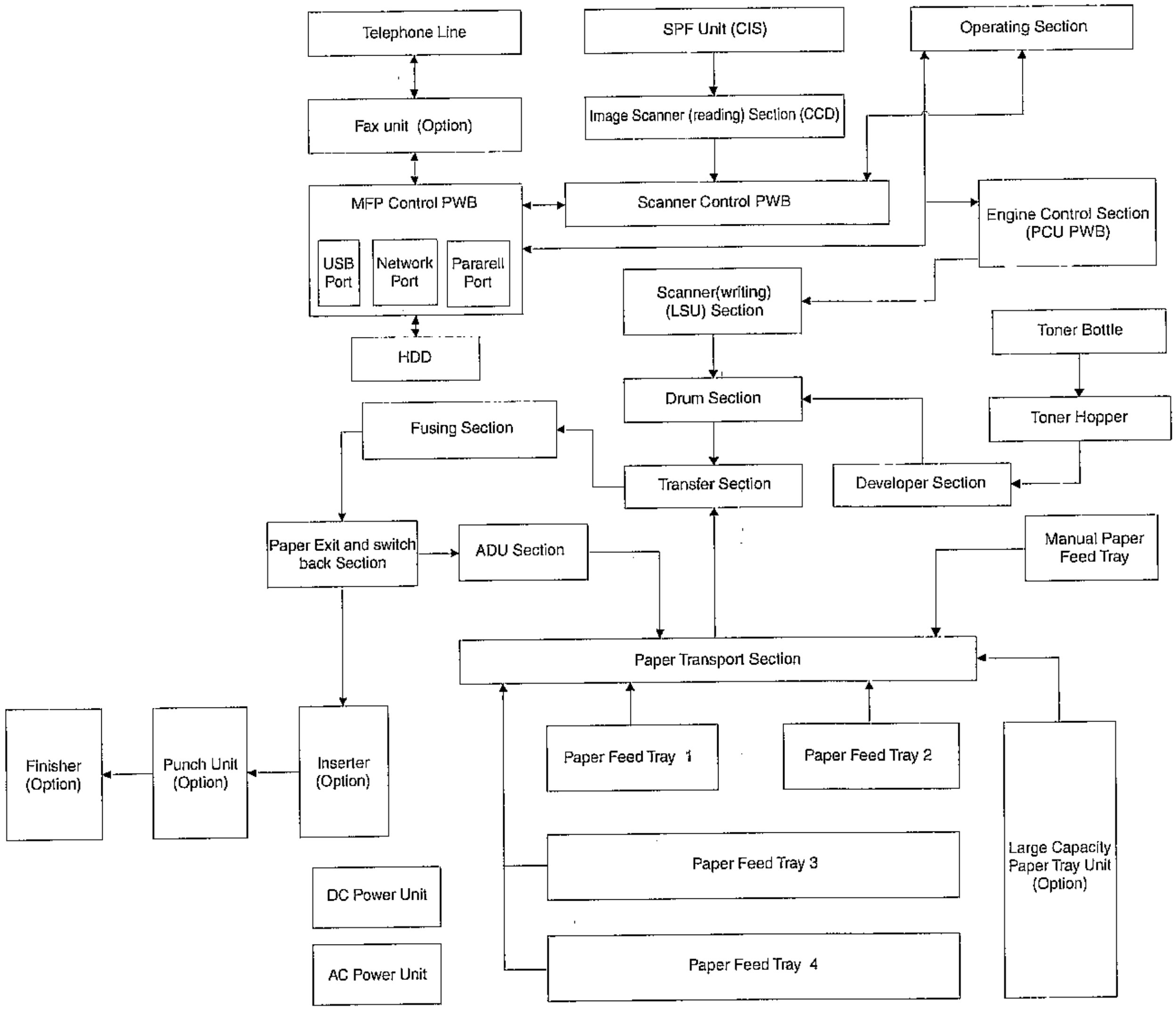
⚠ : Feb. 9 2004

(3) Option combinations

STD:Standard provision, ○:Installable, x:Not installable

Section	Option	Machine model		Remarks
		Copier model	Network printer	
	Item	AR-M550U/ M620U/M700U	AR-M550N/ M620N/M700N	
Paper feed system	Large capacity tray (AR-LC6)	○	○	
Paper exit system	Finisher (AR-F15)	○	○	
	Saddle stitch finisher (AR-F16)	○	○	
	Inserter (AR-CF2)	○	○	
	Punch unit (AR-PN4A/4B/4C/4D)	○	○	For finisher and saddle stitch finisher
Electrical system (Printer controller)	Printer expansion kit (AR-P19)	○	STD	
	PS3 expansion kit (AR-PK5)	○	○	For installation to the AR-M550U/M620U/M700U, the printer expansion kit, AR-P19, is required.
	Barcode font kit (AR-PF1)	○	○	
Software	Data security kit (Not acknowledged version) (AR-FR11)	○	○	
	Network scanner expansion kit (AR-NS3)	○	○	
	Sharp desk 1 license kit (AR-U11M)	○	○	
	Sharp desk 5 license kit (AR-U15M)	○	○	
	Sharpdesk 50 license kit (AR-U1AM)	○	○	
	Sharpdesk 100 license kit (AR-U1BM)	○	○	
FAX system	Facsimile expansion kit (AR-FX8)	○	○	
	FAX expansion memory (8MB) (AR-MM9)	○	○	

2. Block diagram


Telephone Line
SPF Unit (CIS)
Operating Section
Fax unit (Option)
Image Scanner (reading) Section (CCD)
MFP Control PWB
USB Port
Network Port
Pararell Port
Scanner Control PWB
Engine Control Section (PCU PWB)
Scanner(writing) (LSU) Section
HDD
Toner Bottle
Drum Section
Toner Hopper
Fusing Section
Transfer Section
Developer Section
Paper Exit and switch back Section
ADU Section
Manual Paper Feed Tray
Paper Transport Section
Finisher (Option)
Punch Unit (Option)
Inserter (Option)
Paper Feed Tray 1
Paper Feed Tray 2
Paper Feed Tray 3
Paper Feed Tray 4
Large Capacity Paper Tray Unit (Option)
DC Power Unit
AC Power Unit

⚠ : Feb. 9 2004

[3] SPECIFICATIONS

1. Basic specifications

A. Main unit

(1) Type

Type	Console
Clip tray	Provided

Operation mode	Format
Copy mode	Monochrome digital (Electronic photo graphic)

(2) Target users

Mode	Model	Volume of usage	
Copy mode	AR-M550N/ M550U	Scope	– 250,000 pages/month
		Average copy volume	– 40,000 pages/month
	AR-M620N/ M620U	Scope	– 300,000 pages/month
		Average copy volume	– 40,000 pages/month
⚠	AR-M700N/ M700U	Scope	– 300,000 pages/month
		Average copy volume	– 50,000 pages/month

(3) Engine speed

⚠ Paper size	AR-M550N/ M550U	AR-M620N/ M620U	AR-M700N/ M700U
A4, 8.5x11	55ppm	62ppm	70ppm
A4R, 8.5x11R	40ppm	45ppm	48ppm
A5R/5.5x8.5R, Invoice-R	40ppm	45ppm	48ppm
B5	55ppm	62ppm	70ppm
B5R, Executive-R	40ppm	45ppm	48ppm
B4/8.5x14	35ppm	39ppm	45ppm
A3/11x17	30ppm	34ppm	39ppm
Extra	30ppm	34ppm	39ppm
Postcard	Since the next paper is fed after completion of paper exit outside the machine, it depends on the machine composition.		

(4) External dimensions (W x D x H)

Packaged	–
Main unit	728 x 679 x 1050mm (Height: Floor – Glass surface) 728 x 679 x 1192mm (Height: Floor – SPF top)
When an option is installed (Machine occupying area)	
Main unit + LCC installed	1347 x 679 x 1192mm
Main unit + Saddle finisher/ Saddle finisher installed	1794 x 679 x 1192mm
Main unit + LCC + Finisher/ Saddle finisher installed	1887 x 679 x 1192mm
Main unit + Inserter + Finisher/ Saddle finisher	2079 x 679 x 1192mm
Main unit + LCC + Inserter + Finisher/ Saddle finisher installed	2156 x 679 x 1192mm

(5) Weight

⚠ AR-M550N/M620N/M700N	Packaged	About 212 Kg
	Main unit	185 Kg
AR-M550U/M620U/M700U	Packaged	About 214 Kg
	Main unit	185 Kg

(6) Languages supported

Key sheet language support	Japanese, English (America English/UK English), German, French, Spanish, Italian, Dutch, Swedish, Norwegian, Finnish, Danish, Czech, Polish, Hungarian, Greek, Chinese

(7) Internal auditor

System	Key operation system
No. of departments	500

(8) Operation panel

Type	Dot matrix LCD (640 x 240dots)	
Operating procedure	Touch-panel input	
LCD drive display area	153.5 x 57.5mm	
LCD backlight	Fluorescent lamp backlight system	
LCD brightness adjustment	Provided	
Character used in LCD	Type	Sharp/Fujitsu font
	Dot	Kanji: 16 x 16dots, Alphabet and numeral: 8 x 16dots, 16 x 16dots
	Bold text display	○ (Mixed used in a same area or a same sentence is inhibited.)

(9) Controller board

CPU	RM7065 (64bit RISC CPU, 525 MHz)
Interface	
IEEE1284 Parallel	1 port (* For printer/servicing)
Ethernet	1 port*
USB2.0	1 port (* For printer/servicing)
Expansion port	PCI slot 1 slot
Memory	128MB (onboard)
Memory expansion slot	1 slot (168pin SDRAM DIMM compatible) 64MB/ 128MB/256MB expandable

⚠ *: Standard for the AR-M550N/M620N/M700N. The Printer expansion kit AR-P19 is required for the AR-M550U/M620U/M700U.

(10) Hard disk

Hard disk capacity	40GB
⚠ Hard disk storage quantity	60000 sheets

(11) Power source

a. Dehumidifier functionality (Option)

Section	Paper conveyor section/Scanner section

b. Operating voltage/power consumption

Power supply voltage/frequency		Power consumption
		With full options
		Max.
100V (Japan)	50/60Hz	1450
Other countries in 100V system	50/60Hz	1800
Other countries in 200V system	50/60Hz	1840

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2. Engine specifications

A. Paper feeding, paper conveyance, and discharge section

(1) Paper feeding performance

Type	4-stage paper feed tray (Parallel LCC + 2 tray + Multi manual paper feed)	
Paper feed method	Paper is fed from the above by the front loading system.	
Dehumidification heater	Japan	Standard
	Except for Japan	Option

- Tray 1 (Left tray in the parallel LCC)

Paper size (set by software)	Paper size change method	Paper type setting	Paper size setting when shipping	Allowable paper type and weight for paper feed	Paper capacity (Standard paper)	Paper type	Paper remaining detection	Tray lift time	
▲ A4, 8.5" x 11"	Size setting by user	YES	Japan: A4 Inch Series: 8.5" x 11" AB Series: A4 (16K is not supported.)	Normal paper: 60 – 105g/m² (16 – 28lbs)	Japan: 900 sheets (64g/m²) Except for Japan: 800 sheets (80g/m²)	Normal paper, printed paper, recycled, letterhead, punched paper, color paper	Enable (Paper empty and 3 steps)	Up	Within 12sec *1
								Down	Free fall

*1: Time required from tray insertion to empty detection when paper is empty.

- Tray 2 (Right tray in the parallel LCC)

Paper size (set by software)	Paper size change method	Paper type setting	Paper size setting when shipping	Allowable paper type and weight for paper feed	Paper capacity (Standard paper)	Paper type	Paper remaining detection	Tray lift time	
Japan: A4, B5, 8.5" x 11" AB series (Europe, SCA): A4, 8.5" x 11" AB series (Other): A4, B5, 8.5" x 11" Inch Series: 8.5" x 11", A4	Size setting by serviceman (B5 available through bolt fixing and setting by serviceman)	YES	Japan: B5 Inch Series: 8.5" x 11" AB Series: A4 (16K is not supported.)	Normal paper: 60 – 105g/m² (16 – 28lbs)	Japan: 1300 sheets (64g/m²) Except for Japan: 1200 sheets (80g/m²)	Normal paper, printed paper, recycled, letterhead, punched paper, color paper	Enable (Paper empty and 3 steps)	Up	Within 12sec *1
								Down	Free fall

*1: Time required from tray insertion to empty detection when paper is empty.

- Tray 3 (Multi-purpose tray)

Paper size	Paper size change method	Paper type setting	Paper size setting when shipping	Allowable paper type and weight for paper feed	Paper capacity (Standard paper)		Paper type	Document detection		Paper remaining detection
A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR 11 x 17, 8.5 x 14, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 7.25 x 10.5R, 5.5 x 8.5R, Special size (Tab paper is of A4; limited to tab width 12mm – 20mm/8.5 x 11; tab width 6.1mm – 17mm.)	Guide adjustment by user	YES	Shipped with the paper guide width at Max.	Normal paper: 60 – 105g/m² (16 – 28 lbs) Thick paper: 106 – 128g/m² (29 – 34 lbs) 205g/m² (110 lbs) 176g/m² (65 lbs) OHP, label sheet, tab paper *1, *2	Standard paper	Japan: 550 sheets (64g/m²) Except for Japan: 500 sheets (80g/m²)	Normal paper, printed paper, recycled, letterhead, punched paper, color paper, thick paper, label sheet, OHP, tab paper	Automatic detection Auto-AB	A3, B4, A4, A4R, B5, B5R, 8.5 x 13	Enable (Paper empty and 3 steps)
					OHP	40 sheets		Automatic detection Auto-inch	11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 7.25 x 10.5R	
					Tab paper	Enable		For 8K, 16K, and 16KR, setting is made manually.		
								Detection disregard setting	Enable	

*1: For 105g/m² or above, A4/8.5 x 11 or less. For 128g/m² or above, horizontal feed only.

*2: For multi copy and back surface copy, single feed only.

- Tray 4 (500-sheet paper feed tray)

Paper size	Paper size change method	Paper type setting	Paper size setting when shipping	Allowable paper type and weight for paper feed	Paper capacity (Standard paper)	Paper type	Document detection		Paper remaining detection
A3, B4, A4, A4R, B5, B5R, 8K, 16K, 16KR 11 x 17, 8.5 x 14, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 7.25 x 10.5R	Guide adjustment by user	YES	Shipped with the paper guide width at Max.	Normal paper: 60 – 105g/m² (16 – 28 lbs) *1, *2 Thick paper: 106 – 128g/m² (29 – 34 lbs) 205g/m² (110 lbs) 176g/m² (651 lbs)	Japan: 550 sheets (64g/m²) Except for Japan: 500 sheets (80g/m²)	Normal paper, printed paper, recycled, letterhead, punched paper, color paper, thick paper	Automatic detection Auto-AB	A3, B4, A4, A4R, B5, B5R, 8.5x13	Enable (Paper empty and 3 steps)
							Automatic detection Auto-inch	11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 7.25 x 10.5R	
							For 8K, 16K, and 16KR, setting is made manually.		

*1: For 105g/m² or above, A4/8.5 x 11 or less. For 128g/m² or above, horizontal feed only.

*2: For multi copy and back surface copy, single feed only.

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- Manual paper feed

Paper size	Paper type setting	Allowable paper type and weight for paper feed	Paper capacity (Standard paper)	Paper type	Document detection		Paper empty detection
A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR, Postcard 11×17, 8.5×14, 8.5×13, 8.5×11, 8.5×11R, 7.25×10.5R, 5.5×8.5R	YES	Thin paper: 52 – 59g/m² (14 – 15lbs) (Tab paper in single feed) Normal paper: 60 – 105g/m² (16 – 28 lbs) Thick paper: 106 – 128g/m² (29 – 34 lbs), 176g/m² (65 lbs) cover 205g/m² (110 lbs) Index OHP, postcard, label sheet, tab paper*1, *2	Plain paper: 100 sheets (80g/m²) Postcard: 20 sheets OHP: 20 sheets	Normal paper, recycled paper, printed paper, punched paper, color paper, letterhead, back paper, label paper, thick paper, OHP, tab paper (tab width 20mm or less)	Automatic detection Auto-AB	A3, B4, A4, A4R, B5, B5R, Postcard, A5R	YES
					Automatic detection Auto-inch	11×17, 8.5×14, 8.5×13, 8.5×11, 8.5×11R, 7.25×10.5R, 5.5×8.5R	
					Detection of 8K and 16K in the manual paper feed tray is not performed.		

*1: For paper exceeding 105g/m², A4/8.5 x 11 or smaller. For paper exceeding 128g/m², horizontal feed only.

*2: Multi-back surface copy is enable only in single feed.

- Duplex

System	Non stack system
Paper size	A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR, 11 x 17, 8.5 x 14, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 8.5 x 5.5R
Type and weight of paper which can be passed	Plain paper: 60 – 105g/m² (16 – 28lbs) Thick paper: 106 – 128g/m² (29 – 34 lbs), 176g/m² (65 lbs cover) 205g/m² (110 lbs) Index

(2) Finishing performance

Paper exit position / system	Main unit top surface face-down paper exit
Paper exit capacity	250 sheets (80g/m² paper)
Paper exit paper size/ kind	All kinds of paper which can be fed
Remaining paper detection	None
Paper exit paper full detection	Provided

B. Scanner section (read)

(1) Type

Document table mode / SPF (front side) mode	
Scanning method	By the CCD image sensor.

SPF (back side) mode	
Scanning method	By the CIS image sensor

(2) Original standard position, scanning size, and scanning area

a. Original standard position

Document table	Left bottom reference
SPF	Center reference

b. Scanning size

Max. original size	AB Series	A3
	Inch Series	11 x 17

(3) Resolution

Scan resolution (dpi)	Copy mode				
	Platen				
	Magnification ratio	25 – 99	Normal ratio	101 – 171	172 – 400
		600 x 600	600 x 600	600 x 600	600 x (600 x 2)
	SPF				
	Magnification ratio	25 – 99	Normal ratio	101 – 117	118 – 200
	When in single copy	600 x 367	600 x 367	600 x 367	600 x 600
	When in duplex copy (front) CCD	600 x 600	600 x 600	600 x (600 x 2)	600 x (600 x 2)
	When in duplex copy (back) CIS	600 x 300	600 x 300	600 x 600	600 x 600

Input and send resolution (dpi)	When in the Fax send mode and the scanner FAX broadcast mode					
	Select mode	Standard	Fine text	Super fine test	Ultra fine text	600dpi send *
	Input resolution: OC	600 x 600	600 x 600	600 x 600	600 x 600	
	Input resolution: SPF simplex	600 x 367	600 x 367	600 x 367	600 x 367	
	Input resolution: SPF simplex (front) CCD	600 x 600	600 x 600	600 x 600	600 x 600	
	Input resolution: SPF duplex (back) CIS	600 x 300	600 x 300	600 x 300	600 x 300	
	Communication resolution	FAX				
		203.2 x 97.8	203.2 x 195.6	203.2 x 391	406.4 x 391	–
		Internet FAX				
		200 x 100	200 x 200	200 x 400	400 x 400	600 x 600

▲1

* Except for FAX sending

Input and send resolution (dpi)	Scanner mode				
	Select mode	200 x 200	300 x 300	400 x 400	600 x 600
	Input resolution: OC	600 x 600	600 x 600	600 x 600	600 x 600
	Input resolution: SPF simplex	600 x 367	600 x 367	600 x 367	600 x 367
	Input resolution: SPF duplex (front) CCD	600 x 600	600 x 600	600 x 600	600 x 600
	Input resolution: SPF duplex (back) CIS	600 x 300	600 x 300	600 x 300	600 x 300
	Communication resolution	200 x 200	300 x 300	400 x 400	600 x 600

(4) Gradation

Input	Output
256 gradations (8bit)	2 gradations (1bit)

(5) Scanning speed

	Scans per minute
DSPF	65 surfaces (single) 76 surfaces (duplex)

(6) Light source

Type	None-electrode xenon lamp (Front), LED (Back)

(7) Scanning sensor

Type	Monochrome CCD

⚠1 : Feb. 9 2004

C. Scanner section (write)

(1) Type

Scan system	Laser scanning

(2) Laser unit specifications

⚠ Rotation speed	34000 rpm (AR-M550N/U, AR-M620N/U) 40000 rpm (AR-M700N/U)
Mirror surfaces	14 surfaces
⚠ Laser power	0.385±0.04 mW (AR-M550N/U, AR-M620N/U) 0.480±0.04 mW (AR-M700N/U)
Laser beam size	Main scan: 60 – 85 mm, sub scan: 75 – 110 mm
Laser wavelength	770 – 795 nm
Scan width (sub scan direction)	AB series: 420 mm Inch series: 432mm

(3) Resolution

Main scanning direction	Sub scanning direction
600dpi	600dpi

(4) Gradation

2 gradations (1bit)

D. Image processing section

(1) Imaging speed

⚠ 335 mm/sec (AR-M550N/U, AR-M620N/U) 395 mm/sec (AR-M700N/U)

(2) Photosensitive drum

Type	OPC φ80mm
⚠ Life	55ppm: 250K, 62/70ppm: 300K

(3) Toner

⚠1 Capacity	1430/1650g (Other countries), 1275g (Japan)

(4) Developer

⚠1 Capacity	725g x 2 (2 bags are used.)
⚠1 Life	55ppm: 250K, 62/70ppm: 300K

(5) Charging

Type	Corotron
⚠1 Voltage	–590V±2V

(6) Exposure

System	Exposure from laser diode

(7) Developing system

System	Dry, 2-component magnetic brush development
Voltage	–500V±5V (Developing mode) +150V (Cleaning mode)

(8) Transfer

System	Static electricity transfer (transfer belt method)
⚠1 Transfer section	35μA (AR-M550N/U, AR-M620N/U) 40μA (AR-M700N/U) Cleaning mode (AC 4.5kV, DC –100V)

(9) Paper separation system

System	Curvature separation + Separation pawl

(10) Discharging

System	Discharging lamp method

(11) Cleaning

System	Counter blade system

(12) Waste toner collector capacity

Capacity	40% of toner capacity

E. Fuser section

(1) Type

System	Heat roller attachment system

(2) Fuser temperature

(Unit: °C)

Mode			Control temperature			
			Fusing roller		Auxiliary heat roller	
			Inch (U.S.A., Canada)	AB_B (Europe, U.K.) AB_A (Australia)	Inch (U.S.A., Canada)	AB_B (Europe, U.K.) AB_A (Australia)
⚠ Copy/Print mode	Normal mode control temperature	Heat roller	200	205	200	205
	Normal mode control temperature	Sub heat roller	200	205	200	205
	Thick paper mode control temperature	Heat roller	200	205	200	205
	Thick paper mode control temperature	Sub heat roller	200	205	200	205
Pre-heat mode	Energy saving mode control temperature	Heat roller	170	170	170	170
	Control temperature in the energy save mode	Sub heat roller	170	170	170	170

(4) Heat roller

Type	Teflon lined
Life	300K

(5) Pressure roller

Type	Silicone rubber roller
Life	300K

(6) Method

Forced release by releasing tabs

F. Drive section

Drive section	Motor name	Motor type
Image scanner	Scanner motor	Stepping motor
Developing system	Developing motor	DC brush-less motor
Paper feed and conveyance	Paper feed motor	DC brush-less motor
Transfer, OPC drum	OPC drum motor	DC brush-less motor
Fusing	Fusing motor	DC brush-less motor

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3. Operating specifications

A. Common operations

(1) Warm-up, jam recovery time, low power mode, sleep mode

a. Warm-up time (ambient temp. of 20°C)

After turned on	Max. 120 seconds
Reset time from preheat mode	Within 30 seconds

b. Jam recovery time

Jam recovery time	Within approx. 30 sec (Condition: door open/ fusing unit pull-out, after leaving for 60sec, standard condition, polygon stop)
	Under 30 seconds (conditions: door open)

c. Low power mode, sleep mode

⚠

		AR-M550N/U	AR-M620N/U	AR-M700N/U
Low power consumption mode	S/U model*1	216.75W	243.7W	274.5W
	M/N model*2	261.75W	288.7W	319.5W
Reset time from low power mode		30sec		
Power consumption in the sleep mode	S/U model*1	20W or less		
	M/N model*2	95W or less		
Shift time to sleep mode		90 min (Max. 240 min)		

*1: Calculation formula: 3.85 x ipm + 5W

*2: Calculation formula: 3.85 x ipm + 50W

(ipm: input page per minute)

(2) Size sensing summary

Yes: detection; yes

USER: by USER setting

USER 1: USER SETTING 1 (INCH series)

USER 2: USER SETTING 2 (AB series)

SVC: By serviceman setting

No: detection; no (engine performs as extra mode)

N/A: Not applicable

PRT Key OP: by printer key operator program

T/C: Simulation setting(by Serviceman)

The size detection- off mode will be added in printer key operator program. Refer to Front panel spec.

Destination	All Destinations										
Paper size	Tray 1 tandem tray left	Tray 2 tandem tray right	Tray 3 Universal tray		Tray 4 Drawer Tray		LCC desk	Multi bypass tray		Inserter tray	
			USER 1	USER 2	USER 1	USER 2		USER 1	USER 2	USER 1	USER 2
A6-R	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5.5 x 8.5 in.-R	N/A	N/A	Yes *2	N/A	N/A	N/A	N/A	Yes *2	N/A	Yes	USER
A5-R	N/A	N/A	N/A	Yes *2	N/A	N/A	N/A	N/A	Yes *2	USER	Yes
B5	N/A	SVC	N/A	Yes *2	N/A	Yes	N/A	N/A	Yes *2	USER	Yes
B5R	N/A	N/A	N/A	Yes *2	N/A	Yes	N/A	N/A	Yes *2	USER	Yes
Executive-R	N/A	N/A	Yes *2	N/A	Yes	N/A	N/A	Yes *2	N/A	Yes	USER
Letter	USER	SVC	Yes	N/A	Yes	N/A	SVC	Yes	N/A	Yes	USER
Letter-R	N/A	N/A	Yes *2	N/A	Yes	N/A	N/A	Yes	N/A	Yes	USER
A4	USER	SVC	N/A	Yes	N/A	Yes	SVC	N/A	Yes	USER	Yes
A4-R	N/A	N/A	N/A	Yes *2	N/A	Yes	N/A	N/A	Yes	USER	Yes
Legal	N/A	N/A	Yes *3	N/A	Yes *2	N/A	N/A	Yes *3	N/A	Yes	USER
Foolscap	N/A	N/A	N/A	Yes *3	N/A	Yes *2	N/A	N/A	Yes *3	USER	Yes
B4	N/A	N/A	N/A	Yes *3	N/A	Yes *2	N/A	N/A	Yes *3	USER	Yes
A3	N/A	N/A	N/A	Yes *3	N/A	Yes *2	N/A	N/A	Yes *3	USER	Yes
11 x 17 in	N/A	N/A	Yes *3	N/A	Yes *2	N/A	N/A	Yes *3	N/A	Yes	USER
Postcard	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	N/A	N/A
Custom											
148-181mm	N/A	N/A	USER	USER	N/A	N/A	N/A	USER	USER	N/A	N/A
182-432mm	N/A	N/A	USER	USER	N/A	N/A	N/A	USER	USER	N/A	N/A
8K *1	N/A	N/A	USER	USER	USER	USER	N/A	USER	USER	USER	USER
16K *1	N/A	N/A	USER	USER	USER	USER	N/A	USER	USER	USER	USER
16K-R *1	N/A	N/A	USER	USER	USER	USER	N/A	USER	USER	USER	USER

*1: China destination only

*2: Except Tab Paper type

*3: Except Heavy/Label/Transparency/Tab paper type

(3) Paper type summary

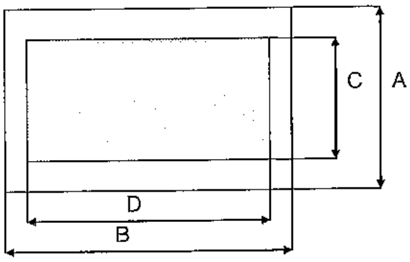
Yes: This function is effective

No: This function is invalid

USER: by USER setting

Paper Type	Print job	Copy job	Fax job	I-Fax job	Filing job	F-R attribute	Duplex disable	Staple disable	Punch disable
Standard paper	USER	USER	USER	USER	USER	NO	NO	NO	NO
Recycled paper	USER	USER	USER	USER	USER	NO	NO	NO	NO
Color paper	USER	USER	USER	USER	USER	NO	NO	NO	NO
Printed paper	USER	USER	USER	USER	USER	YES	NO	NO	NO
Letterhead	USER	USER	USER	USER	USER	YES	NO	NO	NO
Thick paper	USER	USER	USER	USER	USER	NO	NO	YES	NO
Punched paper	USER	USER	USER	USER	USER	NO	NO	NO	NO
Label sheet	USER	USER	USER	USER	USER	NO	YES	YES	YES
OHP	USER	USER	USER	USER	USER	NO	YES	YES	YES
Tab paper	USER	USER	USER	USER	USER	NO	YES	NO	NO
User Type	USER	USER	USER	USER	USER	USER	USER	USER	USER

(4) Effective print area



Paper size	A		B		C	D	E	F	G	H
	(mm/inch)	(dots)	(mm/inch)	(dots)	(dots)	(dots)	(dots)	(dots)	(dots)	(dots)
Ledger	11.0 (inch)	6600	17.0 (inch)	10200	6400	10000	100	100	100	100
Legal	8.5 (inch)	5100	14.0 (inch)	8400	4900	8200	100	100	100	100
Foolscap	8.5 (inch)	5100	13.0 (inch)	7800	4900	7600	100	100	100	100
Letter	11.0 (inch)	6600	8.5 (inch)	5100	6400	4900	100	100	100	100
Letter-R	8.5 (inch)	5100	11.0 (inch)	6600	4900	6400	100	100	100	100
Executive-R	7.25 (inch)	4350	10.5 (inch)	6300	4150	6100	100	100	100	100
Invoice-R	5.5 (inch)	3300	8.5 (inch)	5100	3100	4900	100	100	100	100
A3	297 (mm)	7015	420 (mm)	9921	6815	9721	100	100	100	100
B4	257 (mm)	6070	364 (mm)	8598	5870	8398	100	100	100	100
A4	297 (mm)	7015	210 (mm)	4960	6815	4760	100	100	100	100
A4R	210 (mm)	4960	297 (mm)	7015	4760	6815	100	100	100	100
B5	257 (mm)	6070	182 (mm)	4299	5870	4099	100	100	100	100
B5R	182 (mm)	4299	257 (mm)	6070	4099	5870	100	100	100	100
A5R	148 (mm)	3496	210 (mm)	4960	3296	4760	100	100	100	100
A6R	105 (mm)	2480	148 (mm)	3496	2280	3296	100	100	100	100
Postcard	100 (mm)	2362	148 (mm)	3496	2162	3296	100	100	100	100
–	–	–	–	–	–	reference	4.23 (mm)	4.23 (mm)	4.23 (mm)	4.23 (mm)

NOTE: Engine can make void area by force. Because when real paper size is smaller than the detected size, engine can stop laser shot to prevent machine damage that causes from created drum image which is out of paper.

(5) Image rotation in staple mode

Staple mode by Finisher/Saddle stitch finisher need 180 degrees image rotation.

Because by mechanical reasons, paper edge which to be stapled cannot be changed.

Finisher	Mode	Image rotation
Finisher/Saddle stitch finisher	Non-staple	180°C
	Staple	180°C

▲ : Feb. 9 2004

B. Copy mode

(1) Document size

Scan mode	Paper type	Location	Dimensions		Paper size		Paper size	Note
			Min.	Max.	Min.	Max.		
Original stand mode	AB Series	AB-1	—	297 x 431.8mm	A5	A3	A3, B4, A4, A4R, B5, B5R, A5	
		AB-2	—				A3, A4, A4R, A5, B5, B5R, 216x330	
		AB-3	—				8K, A4, AR4, A5, B4, 16K, 16KR	
	Inch Series	Inch-1	—		5.5 x 8.5	11 x 17	11x17, 8.5x14, 8.5x11, 8.5x11R, 5.5x8.5	
		Inch-2	—				11x17, 8.5x13, 8.5x11, 8.5x11R, 5.5x8.5	
DSPF mode	AB Series	AB-1	—	—	A5	A3	A3, B4, A4, A4R, B5, B5R, A5, 8.5x11R, 216x330	
		AB-2	—	—			8K, A4, A4R, B4, 16K, 16KR, A5, 8.5x11, 216x330	
	Inch Series	Inch-1	—	—	8.5 x 5.5	11 x 17	11x17, 8.5x14, 8.5x11, 8.5x11R, 8.5x5.5, A4	
		Inch-2	—	—			11x17, 8.5x13, 8.5x11, 8.5x11R, 8.5x5.5, A4	
	Mix paper feed (Same series, same width paper) enabled							

(2) Paper size

Paper type	Dimensions		Paper size		Paper size	Note
	Min.	Max.	Min.	Max.		
AB Series	—	—	A6 (A6R) Postcard	A3	A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR, Postcard	
Inch Series	—	—	8.5 x 5.5	11 x 17	11x17, 8.5x14, 8.5x13, 8.5x11, 8.5x11R, 7.25x10.5R, 5.5x8.5R	

(3) Exposure

a. Density/copy image quality process

Exposure speed	Binary: Text (Auto/Manual), Text/Photo, Photo
Number of manual steps	9 steps
Toner save mode	YES

b. Resolution

- Scanning

Main scanning direction	Sub scanning direction
Basic resolution	Basic resolution
600dpi	600dpi

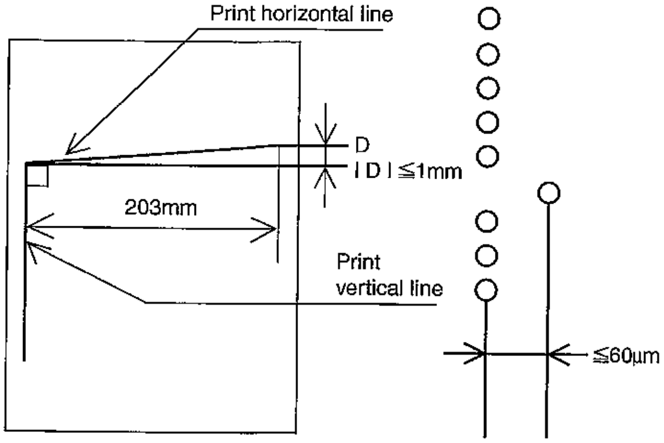
- Write

Main scanning direction	Sub scanning direction
Basic resolution	Basic resolution
600dpi	600dpi

c. Gradation/image processing

Scanning	Printing
256 gradations (8bit)	2 gradations (1bit)

d. Distortion



(4) Copy magnification

a. Copy magnification (independent magnification by direction is possible)

Main scanning direction		Sub scanning direction	
Mode	Magnification range/ fixed magnification	Mode	Magnification range/ fixed magnification
Zoom mode	25 – 400(200)%*	Zoom mode	25 – 400(200)%*
Fixed magnification mode (AB Series)	25, 50, 70, 81, 86, 100, 115, 122, 141, 200, 400%	Fixed magnification mode (AB Series)	25, 50, 70, 81, 86, 100, 115, 122, 141, 200, 400%
Fixed magnification mode (Inch Series)	25, 50, 64, 77, 100, 121, 129, 141, 200, 400%	Fixed magnification mode (Inch Series)	25, 50, 64, 77, 100, 121, 129, 141, 200, 400%

* When copying from SPF: 25 – 200%
Preset copy magnification ratio: 4

b. Copy magnification precision

Main scanning direction		Sub scanning direction	
Copy magnification	Magnification precision	Copy magnification	Magnification precision
Normal copy	100% ± 0.8%	Normal copy	100% ± 0.8%
Enlargement copy	Set magnification ± 1.0%	Enlargement copy	Set magnification ± 1.0%
Reduction copy	Set magnification ± 1.0%	Reduction copy	Set magnification ± 1.0%

c. Zoom method

Main scanning direction	Performed through image processing
Sub scanning direction	Performed by changing image processing and scanning speed

(5) Job speed

a. First copy time

▲

	AR-M550N/ M550U	AR-620N/ M620U	AR-M700N/ M700U
Document table	Within 3.9sec	Within 3.9sec	Within 3.3sec
DSPF	Within 6.1sec	Within 6.1sec	Within 5.5sec

* Measurement conditions: When paper of A4/8.5 x 11 is fed from the main unit tray, the polygon motor is rotating.

⚠ : Feb. 9 2004

b. Copy speed

Copy mode	Paper size	AR-M550N/M550U			AR-620N/M620U			AR-M700N/M700U		
		Copy magnification			Copy magnification			Copy magnification		
		Reduction copy (25%)	Normal copy (100%)	Enlargement copy (400%)	Reduction copy (25%)	Normal copy (100%)	Enlargement copy (400%)	Reduction copy (25%)	Normal copy (100%)	Enlargement copy (400%)
Original stand mode	A4, 8.5x11	55	55	55	62	62	62	70	70	70
	A4R, 8.5x11R	40	40	40	45	45	45	48	48	48
	A5R/5.5x8.5R, Invoice-R	40	40	40	45	45	45	48	48	48
	B5	55	55	55	62	62	62	70	70	70
	B5R, Exective-R	40	40	40	45	45	45	48	48	48
	B4/8.5x14	35	35	35	39	39	39	45	45	45
	A3/11x17	30	30	30	34	34	34	39	39	39
	Extra	30	30	30	34	34	34	39	39	39
	8K	35	35	35	39	39	39	45	45	45
	16K	55	55	55	62	62	62	70	70	70
	16KR	40	40	40	45	45	45	48	48	48
	Postcard	Since the next paper is fed after completion of paper exit outside the machine, it depends on the machine composition.								

c. Job speed

- BLI standards

	AR-M550N/ M550U	AR-M620N/ M620U	AR-M700N/ M700U
S → S	50.1cpm (91%)	56.4cpm (91%)	63.0cpm (90%)
S → D	49.0cpm (89%)	53.3cpm (86%)	58.8cpm (84%)
D → D	51.7cpm (94%)	57.0cpm (92%)	63.0cpm (90%)

* S → S: A4/8 x 11 documents 10 sheets, copy 5 sets

* S → D: A4/8 x 11 documents 10 sheets, copy 5 sets

* D → D: A4/8 x 11 documents 10 sheets (20 pages), copy 5 sets

- Berti standards

	AR-M550N/ M550U	AR-M620N/ M620U	AR-M700N/ M700U
S → S	46.2cpm (84%)	50.8cpm (82%)	57.9cpm (82%)
S → D	33.6cpm (61%)	34.1cpm (55%)	36.9cpm (52%)
D → D	49.0cpm (89%)	53.9cpm (87%)	58.7cpm (83%)

* S → S: A4/8 x 11 documents 5 sheets, copy 5 sets

* S → D: A4/8 x 11 documents 10 sheets, copy 1 set

* D → D: A4/8 x 11 documents 5 sheets (10 pages), copy 5 sets

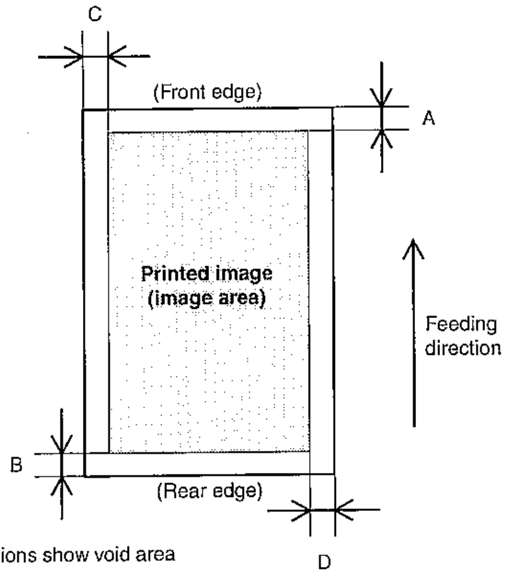
d. Maximum no. of copies

Multi max. quantity	999 sheets

- Max copy set quantity by each copy mode

Single-side copy	999 sheets
Duplex copy	999 sheets

(6) Copy area



Dimensions show void area

- Printable range

A3	289 × 412mm	11 × 17	271 × 424mm
B4	242 × 356mm	8.5 × 14	208 × 348mm
A4	202 × 289mm	8.5 × 13	208 × 322mm
B5	168 × 249mm	8.5 × 11	208 × 271mm
A5	140 × 202mm	5.5 × 8.5	132 × 208mm
Executive	183 × 259mm	8K	270 × 390mm
Postcard	92 × 140mm	16K	195 × 270mm

- Image loss

	Front edge (A)	Rear edge (B)	Total (C + D)	Left edge (C)	Right edge (D)
One side copy (excluding A3 (11 × 17))	Max. 5mm	Max. 5mm	Max. 6mm	Max. 3.0mm	Max. 3.0mm
One side copy for A3 (11 × 17)	Max. 5mm	Max. 7mm	Max. 6mm	Max. 3.0mm	Max. 3.0mm
Duplex copying	Max. 5mm	Max. 7mm	Max. 6mm	Max. 3.0mm	Max. 3.0mm
OHP copying	Max. 10mm	Max. 10mm	Max. 6mm	Max. 3.0mm	Max. 3.0mm

- Void area

	Front edge (A)	Rear edge (B)	Total (C + D)	Left edge (C)	Right edge (D)
One side copy (excluding A3 (11 × 17))	Max. 5mm	Max. 5mm	Max. 8mm	Max. 3.0mm	Max. 3.0mm
One side copy for A3 (11 × 17)	Max. 5mm	Max. 7mm	Max. 8mm	Max. 3.0mm	Max. 3.0mm
Duplex copying	Max. 5mm	Max. 7mm	Max. 8mm	Max. 3.0mm	Max. 3.0mm
OHP copying	Max. 10mm	Max. 10mm	Max. 8mm	Max. 3.0mm	Max. 3.0mm

- Reference shift (off-center shift) normal ratio

Main unit (OC mode)	Simplex	±1.5mm
	Duplex	±1.7mm
Overall (SPF)	Simplex S-S	±2.8mm
	Simplex D-S	±3.5mm
	Duplex S-D	±3.0mm
	Duplex D-D	±3.5mm

(7) Copy functions

Automatic paper selection	○
Automatic magnification ratio selection	○
Vertical/horizontal independent magnification ratio	○
Paper type selection	○ By type setup
Auto tray switching	○
Rotation copy	○
Electronic sort	○
Rotation sort	○
Job reservation	○
Tray installation priority	×
Program call/register	○
Document filing	○
Preheat function	○ Set by the key operator
Auto power shut off function	○ Set by the key operator program
Dept. management	○ 500 department
Process control	○
Tandem copy	○ (Via network)
Indefinite document size input	○
Indefinite paper size input	○
Binding margin	○
Edge erase/Center erase	○
1 set 2 copy	○
Cover/Insert paper/Tab insert paper	○
OHP insert paper	○
Tab copy	○
Centering	×
Multi shot (N in 1)	○ (2 in 1/4 in 1) (Centering provided)
Card shot	○
Center binding	○ (Centering provided)
Duplex copy system switch	○
Large volume document mode	○ (Max. 10000 sheets)
Black-white reversion	○
Shading	×
Mirror image	○
Enlargement continuous copy	×
Repeat	×
Date print	×
Stamp	×
Page print	×

C. Image send function

(1) Mode

Scanner (Scan to E-mail, Scan to Sharp desk, Scan to FTP, Scan to HDD), FAX, Internet FAX

(2) Support system

Mode	Scanner	Internet FAX	FAX
Supported server	SMTP server FTP server	POP server SMTP server ESMTP server	–

(3) Support image

Mode	TIFF, PDF, TIFF-F, TIFF-FX		
Compression system	Scanner	Internet FAX	FAX
	Non-compression G3 (1st dimension) = MH (Modified Huffman) G4 = MMR (Modified MR)	MH, MMR	MH, MR, MMR, JBIG

(4) Image process

Mode	Scanner	Internet FAX	FAX
half tone reproduction	Equivalent to 256 gradations		
Density adjustment	Auto + 5 steps		
Image quality selection	Half tone ON/OFF (*: Not available)		
Resolution (Differs depending on the file type/ communication system.)	200x200dpi *	200x100dpi *	Normal text (203.2x97.8dpi)*
	300x300dpi	200x200dpi	Small text (203.2x195.6dpi)
	400x400dpi	200x400dpi	Fine text (203.2x391dpi)
	600x600dpi	400x400dpi	Ultra fine text (406.4x391dpi)
	–	600x600dpi	–

(5) Address specification

Mode	Scanner	Internet FAX	FAX
LDAP	○ (Can be registered as one-touch address.)		
Address specification	Specified by one-touch, group, or direct address input.		
No. of one-touch registration items	Max. total 999 items (of which 200 can be assigned to FTP and/or desktop)		
Group	○ Registered from the one-touch dial and the direct dial. (Max. 500 items)		
Program	○ (8 items)		
Direct address input	Soft keyboard		Input by the 10-key, # key, and * key.
Chain dial (Direct address input)	–		Used together with Pause. Up to 64 digits.
Resend	The previous address is called.		
Reduction address selection	The address registration number is called by the 10-key input.		

(6) Multiple address specification

Mode	Scanner	Internet FAX	FAX
Address specification	Specified by one-touch, group, or direct address input *.		
▲1 No. of registration items of direct address input *	Max. total 5000 items of group/interface broadcast		
Broadcast send	○ (Broadcast send is disabled for FTP/ Desktop)	○	
Sequential send request	–		○

*: Direct address input: 10-key other than one-touch, and soft keyboard input

- When broadcast includes FAX, the resolution is set to the FAX resolution.
- The compression system in broadcast conforms to the key operator setup.

⚠ : Feb. 9 2004

(7) Functions

<table>
<tr><th colspan="3">Mode</th><th>Scanner</th><th>Internet FAX</th><th>FAX</th></tr>
<tr><td rowspan="17">Send function</td><td colspan="2">Memory transmission</td><td>–</td><td colspan="2">○</td></tr>
<tr><td colspan="2">Onhook</td><td colspan="2">–</td><td>○</td></tr>
<tr><td colspan="2">Quick online send</td><td colspan="2">–</td><td>○</td></tr>
<tr><td colspan="2">Direct transmission</td><td colspan="2">–</td><td>Only in Onhook</td></tr>
<tr><td colspan="2">Automatic reduction send</td><td colspan="2">–</td><td>○ A3 → B4,
A3 → A4,
B4 → A4</td></tr>
<tr><td colspan="2">⚠ Rotation send</td><td colspan="3">○</td></tr>
<tr><td colspan="2">⚠ Zoom send</td><td colspan="3">○ (Zooming of fixed size → fixed size only.)</td></tr>
<tr><td rowspan="3">Recall mode</td><td>Error</td><td>–</td><td colspan="2">○</td></tr>
<tr><td>Busy</td><td>–</td><td>–</td><td>○</td></tr>
<tr><td></td><td colspan="3">Number of times/time are set by the key operator.</td></tr>
<tr><td colspan="2">Book document send</td><td colspan="3">○</td></tr>
<tr><td colspan="2" rowspan="2">Long document send</td><td>○</td><td>○</td><td>○</td></tr>
<tr><td colspan="3">Max. 800mm</td></tr>
<tr><td colspan="2">File division send</td><td>○</td><td colspan="2">–</td></tr>
<tr><td colspan="2">⚠ Send size limit</td><td>○</td><td>○</td><td>–</td></tr>
<tr><td colspan="2">No. of registration items of senders</td><td colspan="3">Max. 999 items</td></tr>
<tr><td colspan="5"></td></tr>
<tr><td rowspan="15">Receive function</td><td colspan="2">Automatic reception</td><td>–</td><td colspan="2">○</td></tr>
<tr><td colspan="2">Manual reception</td><td>–</td><td colspan="2">○</td></tr>
<tr><td colspan="2">Memory receive</td><td>–</td><td colspan="2">○</td></tr>
<tr><td colspan="2">Fixed size reduction receive</td><td>–</td><td colspan="2">○</td></tr>
<tr><td colspan="2">Specified size zoom receive</td><td colspan="3">–</td></tr>
<tr><td colspan="2">Rotation receive</td><td>–</td><td colspan="2">○</td></tr>
<tr><td colspan="2">Division receive</td><td>–</td><td colspan="2">○ Conditions are set by the key operator.</td></tr>
<tr><td colspan="2">Duplex receive</td><td>–</td><td colspan="2">○ Conditions are set by the key operator.</td></tr>
<tr><td colspan="2">2 in 1 receive</td><td colspan="3">–</td></tr>
<tr><td colspan="2">⚠ Domain/ Address specification receive enable</td><td>–</td><td>○ (50 items)</td><td>–</td></tr>
<tr><td colspan="2">⚠ Domain/ Address specification receive disable</td><td>–</td><td>○ (50 items)</td><td>Specified number only</td></tr>
<tr><td colspan="2">Automatic switch of TEL/ FAX</td><td colspan="2">–</td><td>○
(Japan only)</td></tr>
<tr><td colspan="2">External telephone connection remote</td><td colspan="2">–</td><td>○</td></tr>
<tr><td colspan="2">Answering telephone connection</td><td colspan="2">–</td><td>× (PAT countermeasure)</td></tr>
</table>

<table>
<tr><th colspan="2">Mode</th><th>Scanner</th><th>Internet FAX</th><th>FAX</th></tr>
<tr><td rowspan="2">Receive function</td><td>Transfer function when output is disable</td><td>–</td><td colspan="2">○</td></tr>
<tr><td>Automatic boot mode</td><td>–</td><td colspan="2">○</td></tr>
<tr><td rowspan="15">Special functions</td><td>Time specification</td><td colspan="3">○</td></tr>
<tr><td>Poling receive</td><td>–</td><td>–</td><td>○</td></tr>
<tr><td>Bulletin board send</td><td>–</td><td>–</td><td>○</td></tr>
<tr><td>⚠ Cover function</td><td>–</td><td>–</td><td>×</td></tr>
<tr><td>Sender print</td><td>–</td><td colspan="2">○</td></tr>
<tr><td>Page division</td><td colspan="3">○</td></tr>
<tr><td>Page connection</td><td colspan="3">×</td></tr>
<tr><td>Confidential (Remote machine)</td><td colspan="2">–</td><td>○ (F code system)</td></tr>
<tr><td>Relay broadcast indication</td><td colspan="2">–</td><td>○ (F code system)</td></tr>
<tr><td>Send message</td><td colspan="3">×</td></tr>
<tr><td>Edge erase</td><td colspan="3">○</td></tr>
<tr><td>Center erase</td><td colspan="3">○</td></tr>
<tr><td>Multi shot</td><td colspan="3">○ (2 in 1)</td></tr>
<tr><td>Card shot</td><td colspan="3">○</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td rowspan="12">⚠ Report/ List function</td><td>Communication record table</td><td>×</td><td colspan="2">○</td></tr>
<tr><td>Communication result table</td><td colspan="3">○</td></tr>
<tr><td>Address/ Telephone number table</td><td colspan="3">○</td></tr>
<tr><td>Group table</td><td colspan="3">○</td></tr>
<tr><td>ID, sender address table</td><td colspan="3">–</td></tr>
<tr><td>⚠ Sender table</td><td>○</td><td colspan="2">×</td></tr>
<tr><td>Confidential box check table</td><td colspan="2">–</td><td>○
(Integrated into the memory box table.)</td></tr>
<tr><td>Interface group table</td><td colspan="2">–</td><td>○
(Integrated into the memory box table.)</td></tr>
<tr><td>Program table</td><td colspan="3">○</td></tr>
<tr><td>Send reservation table</td><td colspan="3">×</td></tr>
<tr><td>Memory box table</td><td colspan="2">–</td><td>○ (FAX mode only)</td></tr>
<tr><td>⚠ Memory contents Clear notification table</td><td colspan="3">–
(Error report)</td></tr>
<tr><td>Other</td><td>PC send</td><td>–</td><td>PC-iFAX</td><td>PC-FAX</td></tr>
</table>

(8) Transmission system

Mode	Scanner	Internet FAX	FAX
Transmission time	–		Between 2 and 3sec (Super G3/JBIG) Between 6 and 7sec (G3 ECM)
Modem speed	–		33.6kbps → 2.4kbps automatic fall back
Mutual communication	–		Super G3/G3
Communication line	–		Public Switched Telephone Network (PSTN), Private Branch Exchange (PBX), F net
ECM	–		○

(9) Record size

Mode	Scanner	Internet FAX	FAX
Max. record width	293mm		
Record size	–	–	A3 – A5, 11"x17" – 5.5"x8.5"

(10) F code communication

Mode	Scanner	Internet FAX	FAX
Sub address	–		○
⚠ Pass code	–		○

D. Printer function

⚠ Standard for the AR-M550N/M620N/M700N. The Printer expansion kit AR-P19 is required for the AR-M550U/M620U/M700U.

(1) Platform

IBM PC/AT (or compatible)
Macintosh (MacOS8.6 or later (excluding MacOS10.2.2) and Apple-Talk applicable)

(2) Support OS

Custom PS	Windows 95/98/Me
	Windows NT 4.0 Windows 2000 Windows XP
Custom PCL5e/ 6(XL)SPDL2	Windows 95/98/Me
	Windows NT 4.0 Windows 2000 Windows XP
PPD	Windows 95/98/Me
	Windows NT 4.0 Windows 2000 Windows XP
⚠	Mac OS8.6 – 9.x, 10.1.5 and 10.2 – 10.2.8 (excluding 10.2.2)

(3) PDL emulation

PCL5e compatible, PCL6 compatible, SPDL2 (Japan only), PostScript3 compatible (option)

(4) ESC/P, ESC/P super

(Japan only)

Emulation	ESC/P (VP-1100), ESC/P_super
Built-in fonts	Japanese: Mincho, Gothic (bitmap) ANK: Roman, Sans Serif (Bitmap)

(5) Built-in fonts

The printing system is provided with standard fonts of one type of HP compatible bitmap font and 80 types of Latin outline fonts for PCL.

In addition, by use of the PS expansion kit, 136 types of Latin outline fonts and 5 types of Japanese outline fonts are available.

Bitmap fonts	1 kind of font
PCL5 Latin font	80 PCL Latin fonts (SPDL) Standard built-in fonts
PCL Kanji font	Option (2 ACT Fonts)
PS Latin font	136 Type 1 Latin fonts Auxiliary to the PS expansion kit
PS kanji font	5 Type 1 Kanji Fonts Auxiliary to the PS expansion kit (Japan only)
Bar code font	Option

(6) Print channel

Support print channel	IEEE1284 parallel port PSERVER/RPRINT for NetWare environment LPR IPP PAP: EtherTalk (AppleTalk) FTP NetBEUI Raw Port (Port 9100) USB2.0
IEEE1284 parallel port	Receives print data via the standard IEEE1284 parallel port.
USB	USB 1.1: Windows98/98SE/Me/2000/XP only USB 2.0: Windows 2000 / XP only
For NetWare environment PSERVER/RPRINT	Used in NetWare environment. Print channel in the PSERVER/PRINT mode.
LPR	UNIX LPR/LPD command compatible print channel
IPP	IPP 1.0 conforming print channel
PAP: EtherTalk (AppleTalk)	Print channel used in the Macintosh environment
FTP	Function to print receive data by use of the built-in FTP server.
NetBEUI	Microsoft NetBEUI compatible print channel
Port9100	Supports TCP port 9100 (Raw port).

(7) Print function

Bar code font	(JetCAPS BarDIMM emulation)
EZ cluster	×
PDF/TIFF direct print	○

(8) Compatibility

PCL 5e compatible	PCL5e is aimed to provide compatibility with HP LaserJet 4050. A small difference in margin, a difference in rendering caused by a different font family, the default, a difference in the transfer function are not included in the compatibility. Not all PCL commands are included in the compatibility.
PCL6 compatible	PCL6 is aimed to provide compatibility with HP LaserJet 4050. A small difference in margin, a difference in rendering caused by a different font family, the default, a difference in the transfer function are not included in the compatibility. Not all PCL commands are included in the compatibility.

PostScript compatible	PostScript is aimed to provide compatibility with Adobe PostScript. A small difference in margin, a difference in rendering caused by a different font family, the default, a difference in the transfer function are not included in the compatibility.
ESX/P and ESC/P Super compatible	ESC/P and ESC/P Super are aimed to provide compatibility with Epson VP-1100. A small difference in margin, a difference in rendering caused by a different font family, the default, a difference in the transfer function are not included in the compatibility.

(9) Environment setting

Setting item	General
Default setting	Basic setting of printing such as the number of copies and printing direction.
PCL (SPDL*) setting * SPDL is for Japan only.	PCL (SPDL) symbol setting and font setting
PS setting	Setting of print enable/disable in a PS error
ESC/P (super) setting (Japan only)	ESC/P font and return code setting

(10) Windows driver function

a. Frequently used functions

Function	PCL5e	PCL6	PS	PPD *1 (In the case of Windows XP)
Number of copies	1 – 999			
Print direction	Vertical/Horizontal			Vertical/Horizontal/ Horizontal rotation (*2)
Duplex print	Simplex print, duplex print (Left/ Upper/Right binding)			Simplex print, duplex print (Long side/Short side binding) (*2)
Center binding	Invoice on Letter, Letter on Ledger, A5 on A4, A4 on A3, B5 on B4, Letter on Letter, Ledger on Ledger, A4 on A4, A3 on A3, B4 on B4			Yes (2up booklet only) (*2)
Binding direction	Simplex print, duplex print (Left/ Upper/Right binding)			–
N-up	2/4/6/8			2/4/6/9/16 (*2)
N-up direction	Z	Z/Reverse Z/N/ Reverse N		Z (*2)
N-up frame line	○/X			○ (Always ○) (*2)

*1: For printing, the PS driver bundled in Windows is required.

*2: The PS driver bundled in Windows may differ in specifications depending on the OS.

b. Paper feed system

Function	PCL5e	PCL6	PS	PPD *1 (In the case of Windows XP)
Paper size	A3/B4/A4/B5/A5/Postcard/Ledger/Legal/Foolscap/ Letter/Executive/Invoice/8K/16K			
Paper type	Normal paper, letterhead, printed paper, punched paper, recycled paper, color paper, label sheet, thick paper, OHP, tab paper			
User definition type	7 types			–
Paper feed method	Auto paper feed, Tray 1/2/3/4/5, manual feed			
Cover paper/ Back cover page	○/X Setting of Duplex/Simplex/No print			–
Insert paper	○/X Setting of Duplex/Simplex/No print			–
OHP insert paper	X, ○ (White paper), ○ (Printed paper)			–

*1: For printing, the PS driver bundled in Windows is required.

c. Paper exit method

Function	PCL5e	PCL6	PS	PPD *1 (In the case of Windows XP)
Paper exit destination setting	Center tray Finisher → Tray 1 Finisher → Tray 2			
	Saddle stitch finisher → Tray 1 Saddle stitch finisher → Tray 2 Saddle stitch finisher → Saddle stitch tray			○ (*2)
Staple	Finisher • No staple • 1 position • 2 positions			
	Saddle stitch finisher • No staple • 1 position • 2 positions			
Offset	○/X			

*1: For printing, the PS driver bundled in Windows is required.

*2: The PS driver bundled in Windows may differ in specifications depending on the OS.

d. Exposure

Function	PCL5e	PCL6	PS	PPD *1 (In the case of Windows XP)
Resolution	600/300dpi		600dpi	600dpi
Halftone	–	○/X (AR-M550N/U, AR-M620N/U) – (AR-M700U/N)	Screen Frequency 8.0 to 360.0 in 0.1 steps Screen angle 0.0 to 360.0 in 0.1 steps	–
Graphic mode selection	Luster HP-GL2	Luster vector	–	
Smoothing	○/X (AR-M550N/U, AR-M620N/U) – (AR-M700U/N)			○/X (AR-M550N/U, AR-M620N/U) – (AR-M700U/N: Display only and no function)
Toner save	○/X			
Ultra fine photo	–			
Black-white reversion	–		○/X	
Mirror image	–		Horizontal/ Vertical	Horizontal (*2)
Zoom	–		25 – 400% (XY independent)	1 – 1000% (*2)
Fit page	○/X			–

*1: For printing, the PS driver bundled in Windows is required.

*2: The PS driver bundled in Windows may differ in specifications depending on the OS.

e. Font

Function	PCL5e	PCL6	PS	PPD *1 (In the case of Windows XP)
Download system which can be selected	Bitmap, TrueType		Bitmap, Type 1, TrueType	Auto, Outline, Bitmap, Native TrueType (*2)

*1: For printing, the PS driver bundled in Windows is required.

*2: The PS driver bundled in Windows may differ in specifications depending on the OS.

f. Other functions

Function	PCL5e	PCL6	PS	PPD *1 (In the case of Windows XP)
Units composition setting	○			
Watermark	○			○ (Limitations on functions)
Overlay	○			–
Print hold	○			–
Job retention	○			–
Sample print	○			–
Print department management	○			–
User setting	○			–
Option auto setting	○			–
Job complete notification	○			–
Tandem print	○			
Carbon print	○			–
Enlargement continuous copy	–			
Vertical/horizontal independent magnification ratio	–		○	–
Cover insertion +center binding	○			–
Document filing	○			–

*1: For printing, the PS driver bundled in Windows is required.

(11) Macintosh driver functions

a. Frequently used functions

Function	Macintosh PPD (In the case of Mac OS X Ver.10.2.8)
Number of copies	1 – 999
Print direction	Vertical/Horizontal/Horizontal rotation (*1)
Duplex print	Simplex print, duplex print, pamphlet (Left/Right/Upper binding)
Center binding	○
N-up	2/4/6/9/16 (*1)
N-up direction	Z/Reverse Z/N/Reverse N (*1)
N-up frame line	None / Single Hairline / Single Thinline / Double Hairline / Double Thinline (*1)

*1 : The PS driver bundled in Macintosh may differ in specifications depending on the OS.

b. Paper feed method

Function	Macintosh PPD (in the case of Mac OS X Ver.10.2.8)
Paper size	A3/B4/A4/B5/A5/Postcard/Ledger/Legal/Foolscap/Letter/Executive/Invoice/8K/16K
Paper type setting	Normal paper/Letter head/Printed paper/Punched paper/Recycled paper/Color paper/Label paper/Heavy paper/OHP/Tab paper
User definition type	–
Paper feed method	Auto paper feed, Tray 1/2/3/4/5, manual feed
Paper feed tray of the first page	○/X (*1)
Cover paper/Back cover paper/Insert paper	– (OS9 only: None/before document/after document) (*1)
OHP insert paper	X, ○ (White paper), ○ (Printed paper)

*1: The PS driver bundled in Macintosh may differ in specifications depending on the OS.

c. Paper exit method

Function	Macintosh PPD (in the case of Mac OS X Ver.10.2.8)
Paper exit destination setting	Center tray
	Finisher Tray 1 Tray 2
	Saddle stitch finisher Tray 1 Tray 2 Saddle stitch tray
Staple	Finisher • No staple • 1 position • 2 positions
	Saddle stitch finisher • No staple • 1 position • 2 positions
Offset	○/X

d. Exposure

Function	Macintosh PPD (in the case of Mac OS X Ver.10.2.8)
Resolution	600dpi
Half tone	–
Graphic mode selection	–
Smoothing	○/X (AR-M550N/U, AR-M620N/U) – (AR-M700N/U)
Toner save	○/X
Ultra fine photo	○/X (AR-M550N/U, AR-M620N/U) – (AR-M700N/U)
Black-white reversion	–
Mirror image	–
Zoom	1-100000 (*1)
Fit page	–

*1 : The PS driver bundled in Macintosh may differ in specifications depending on the OS.

e. Font

Function	Macintosh PPD (in the case of Mac OS X Ver.10.2.8)
Download system which can be selected	– (Selection allowed only with Mac OS9 (LaserWriter)) (*1)

*1: The PS driver bundled in Macintosh may differ in specifications depending on the OS.

f. Other functions

Function	Macintosh PPD (in the case of Mac OS X Ver.10.2.8)
Units composition setting	○
Watermark	○
Overlay	×
Print hold	○
Job retention	○ (PIN code input enable)

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Function	Macintosh PPD (in the case of Mac OS X Ver.10.2.8)
⚠ Sample print	○
Print department management	○
User setting	–
⚠ Option auto setting	– (OS9 only: ○)
Job complete notification	–
Tandem print	○
⚠ Tab print	–
Carbon print	–
Enlargement continuous copy	–
Vertical/horizontal independent magnification ratio	–
Cover insertion +center binding	–
⚠ Document filing	Yes (*1)

(12) Print performance

Model	PDL type	Word: script.doc (jpn) 9 pages in total	Excel: EXCL.xls 3 pages in total	PowerPoint: J11.ppt 12 pages in total
AR-M550N/ M550U	PCL5 (SPDL2)	14sec	9sec	28sec
AR-M620N/ M620U	PCL5 (SPDL2)	13sec	8sec	24sec
⚠ AR-M700N/ M700U	PCL5 (SPDL2)	sec	sec	sec

* Measurement conditions
Windows
PC: Pentium III 1GHz 128MB
OS: Windows XP Professional
Macintosh
PC: PowerPC G3 700MHz 256MB
⚠ OS: MacOS X
Driver setting: Default
Software: Microsoft Office XP

E. Document filing function

(1) Basic function

Document filing capacity	16GB	
Fixed folder	Standard folder User folder	Max. 20000 pages or 3000 files
	Temporary folder	Max. 10000 pages or 1000 files
Number of pages for one file	Conforms to the large volume document mode. (Within the HD capacity)	
Number of folders which can be formed in the user folder	Max. 500 folders	
Number of users which can be registered	Max. 500 users	

(2) Data operation by each function (For S/U models, temporary saving only.)

Job	Each folder in the standard folder/user folder		Temporary folder	
	Common data	Confidential data	Common data	Confidential data
Copy	○	○	○	×
Printer	○	○	○	×
⚠ Scan to E-mail/FTP	○	×	○	×
Scan to HDD	○	○	×	×
FAX receive	×	×	×	×
FAX send	○	×	○	×
i-FAX receive	×	×	×	×
i-FAX send	○	×	○	×
PC FAX/PC i-FAX send	○	×	○	×

(3) Data operation contents

A: S/U model alone
B: Printer expansion kit (AR-P19)
C: Network expansion kit (AR-NS3)
D: FAX expansion kit (AR-FX8)

	A (S/U model)	A+B (M/N model)	A+C (+B)	A+D	A+B+D	A+B+C+D
Reprint	○	○	○	○	○	○
Resend *1	×	○	○	○	○	○
Delete	○	○	○	○	○	○
Shift	×	○	○	×	○	○
Attribute change *2 (Protection from common use, etc.)	○ (Protection from common use <> only)	○	○	○ (Protection from common use <> only)	○	○
File name change	○	○	○	○	○	○
Folder making (in the user folder)	×	○	○	×	○	○
File transfer to the local PC, FTP server	×	○	○	×	×	○
Machine HDD occupying rate display	×	○	○	×	○	○
Print log display, CSV export	×	○ (Enable only on the Web)	○ (Enable only on the Web)	×	○ (Enable only on the Web)	○ (Enable only on the Web)
Print data image view	×	○ (Enable only on the Web)	○ (Enable only on the Web)	×	○ (Enable only on the Web)	○ (Enable only on the Web)
Retrieval	○ (Simple)	○ (Simple)	○ (Simple)	○ (Simple)	○ (Simple)	○ (Simple)

*1: The resend enable modes (E-mail send, FAX send, internet FAX send, PC-FAX send, PC-i-FAX send) vary depending on the installation conditions of options.

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*2: Attribute change: The file attribute is changed from "Common" to "Protection"/"Confidential", etc.

(4) Upper limit value of the storable file, folder, and user

The number of files storable in the standard folder and the user folder	Max. 3,000 files or 20,000 pages
The number of files storable in the temporary storage folder	Max. 1,000 files or 10,000 pages
The number of files storable in the user folder	Max. 500 folders
Number of users which can be registered	Max. 500 users

4. Safety and environmental protection standards

A. Safety standards

Item	Standard
Safety standards	Electric safety regulations
	UL
	CSA
	CE (SEMKO)
	GB4943
Environmental standards (EMC)	VCCI Class B
	FCC Class B
	CISPR22 B
	GB9254-1998 CLASSB
	GB17625.1-1998
	GB17625.2-1999
	GB/T17618-1998
Line standards (When the FAX expansion board is installed.)	Technical standard conformity acknowledgement (Telecommunications Business Law)
	FCC part 68
	ICCS-03
	ECCTR-21
	A-Tick

B. Environmental standards

(1) Power consumption and environmental standards

Standard
International energy program complex machine (EPS)
Environmental Choice Program (ECP)
Conforms to New Blue Angel.
Nordic swan (Sharp: Follows the Green Product Declaration.)

(2) Ozone level

Max. 0.02mg/m^3

(3) Noise level

Model	Operating	Standby
AR-M550N/M550U	7.3B or less	5.5B or less
AR-M620N/M620U	7.3B or less	5.5B or less
△1 AR-M700N/M700U	7.3B or less	5.5B or less

5. Ambient conditions

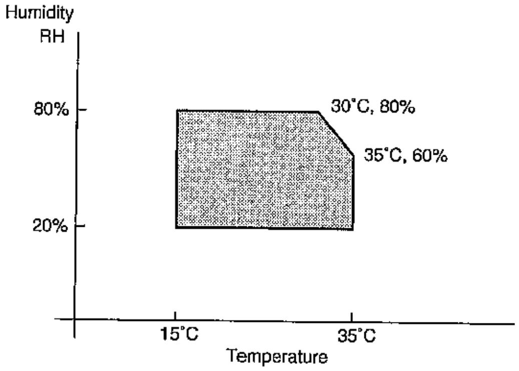
A. Space required

(1) Area required

Main unit	1263 x 679mm
With full options	2163x691.5mm (With the AR-LC6, AR-F15, AR-F16, AR-CF2 installed)

B. Operating ambient conditions

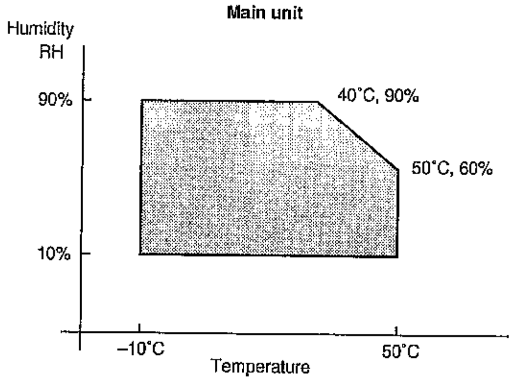
(1) Temperature/Humidity

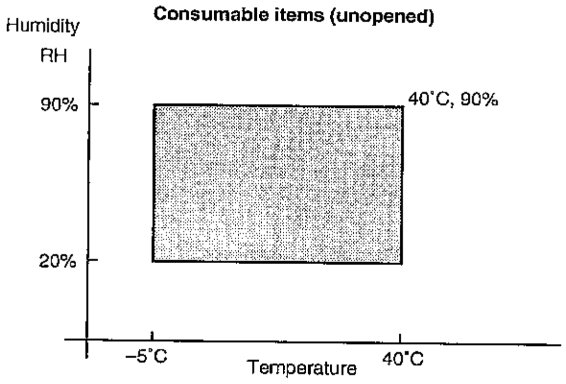


(2) Power supply voltage and frequency

Power supply voltage	Rated voltage ± 10%
Power supply frequency	Rated frequency ± 2%

C. Ambient storage conditions





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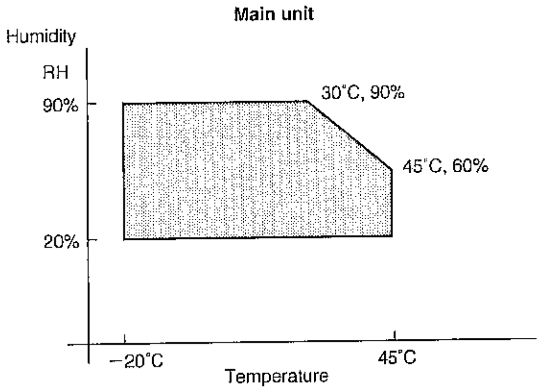
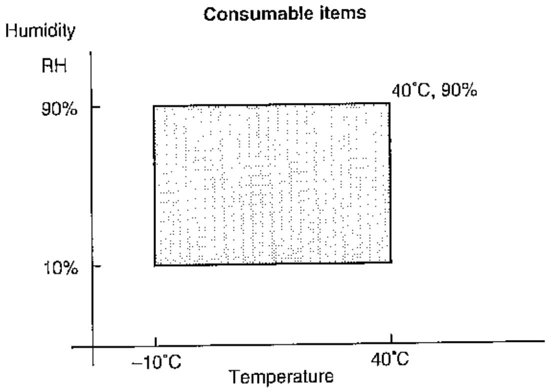
D. Ambient conditions for transporting





E. Standard temperature and humidity

Temperature	20 to 25°C
⚠ Humidity	65 ± 5% RH

6. Service related items

Device cloning	○
Address book send/ receive tool	○
Humidifier heater	SEC only (Standard provision for Japan model) (Supplied as a service part)
RIC	Telephone line RIC terminal available
	E-mail RIC available (Conforming to soft key.)
Coin vendor terminal	○
Card counter	Angle/Harness parts supply
Key counter (SF-71A/B)	Only the harness is left.
Mechanical counter	Conforming to 7-digit OEM
	For SHARP (Parts support)

[4] CONSUMABLE PARTS

1. Supply system table

A. USA, Canada, South and Central America

No.	Part name	Content	Life	Model name	Packing	Remark
1	Toner cartridge (Black)	Toner cartridge (Black) x 10 (Toner; Net weight 1430g) With IC chip	720k (72k x 10)	AR-620MT	1	* Life setting by A4/LT 6% document MT = NT x 10
		Toner cartridge (Black) x 10 (Toner; Net weight 1650g) With IC chip	830k (83k x 10)	AR-621MT		
2	Developer (Black)	Developer (Black) x 10 (Developer; Net weight 725g)	62/70ppm: 300k 55ppm: 250k	AR-620MD	1	Used two bags. MD = ND x 10
3	Drum	OPC drum x 1	62/70ppm: 300k 55ppm: 250k	AR-620DR	10	

B. Europe affiliates (Including East Europe, Russia)/Australia/New Zealand/UK)

No.	Part name	Content	Life	Model name	Packing	Remark
1	Toner cartridge (Black)	Toner cartridge (Black) x 10 (Toner; Net weight 1430g) With IC chip	720k (72k x 10)	AR-620LT	1	* Life setting by A4/LT 6% document LT = T x 10
		Toner cartridge (Black) x 10 (Toner; Net weight 1650g) With IC chip	830k (83k x 10)	AR-621LT		
2	Developer (Black)	Developer (Black) x 10 (Developer; Net weight 725g)	62/70ppm: 300k 55ppm: 250k	AR-620LD	1	Used two bags. LD = DV x 10
3	Drum	OPC drum x 1	62/70ppm: 300k 55ppm: 250k	AR-620DM	10	

C. Asia affiliates

No.	Part name	Content	Life	Model name	Packing	Remark
1	Toner cartridge (Black)	Toner cartridge (Black) x 10 (Toner; Net weight 1430g) With IC chip	720k (72k x 10)	AR-620CT	1	* Life setting by A4/LT 6% document CT = ST x 10
		Toner cartridge (Black) x 10 (Toner; Net weight 1650g) With IC chip	830k (83k x 10)	AR-621CT		
2	Developer (Black)	Developer (Black) x 10 (Developer; Net weight 725g)	62/70ppm: 300k 55ppm: 250k	AR-620CD	1	Used two bags. CD = SD x 10
3	Drum	OPC drum x 1	62/70ppm: 300k 55ppm: 250k	AR-620DR	10	

D. Hong Kong

No.	Part name	Content	Life	Model name	Packing	Remark
1	Toner cartridge (Black) For SRH	Toner cartridge (Black) x 10 (Toner; Net weight 1430g) With IC chip	720k (72k x 10)	AR-620CT-C	1	* Life setting by A4/LT 6% document CT-C = ST-C x 10
		Toner cartridge (Black) x 10 (Toner; Net weight 1650g) With IC chip	830k (83k x 10)	AR-621CT-C		
2	Developer (Black)	Developer (Black) x 10 (Developer; Net weight 725g)	62/70ppm: 300k 55ppm: 250k	AR-620CD-C	1	Used two bags. CD-C = SD-C x 10
3	Drum	OPC drum x 1	62/70ppm: 300k 55ppm: 250k	AR-620DR-C	10	

E. China (AR-M620N/M700N)

No.	Part name	Content	Life	Model name	Packing	Remark
1	Toner cartridge (Black)	Toner cartridge (Black) x 10 (Toner; Net weight 1430g) With IC chip	72k (72k x 1)	AR-621ST-C	1	* Life setting by A4/LT 6% document
		Toner cartridge (Black) x 10 (Toner; Net weight 1650g) With IC chip	83k (83k x 1)	AR-622ST-C		
2	Developer (Black)	Developer (Black) x 10 (Developer; Net weight 725g)	62/70ppm: 300k	AR-620SD-C	1	Used two bags.
3	Drum	OPC drum x 1	62/70ppm: 300k	AR-620DR-C	1	

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F. Middle East/Philippine

No.	Part name	Content	Life	Model name	Packing	Remark
1	Toner cartridge (Black)	Toner cartridge (Black) x 10 (Toner; Net weight 1430g) With IC chip	720k (72k x 10)	AR-620ET	1	* Life setting by A4/LT 6% document ET=FT x 10
		Toner cartridge (Black) x 10 (Toner; Net weight 1650g) With IC chip	830k (83k x 10)	AR-621ET		
2	Developer (Black)	Developer (Black) x 10 (Developer; Net weight 725g)	62/70ppm: 300k 55ppm: 250k	AR-620CD	1	Used two bags. CD = SD x 10
3	Drum	OPC drum x 1	62/70ppm: 300k 55ppm: 250k	AR-620DR	10	

G. Taiwan

No.	Part name	Content	Life	Model name	Packing	Remark
1	Toner cartridge (Black)	Toner cartridge (Black) x 10 (Toner; Net weight 1430g) With IC chip	720k (72k x 10)	AR-620ET	1	* Life setting by A4/LT 6% document ET=FT x 10
		Toner cartridge (Black) x 10 (Toner; Net weight 1650g) With IC chip	830k (83k x 10)	AR-621ET		
2	Developer (Black)	Developer (Black) x 10 (Developer; Net weight 725g)	62/70ppm: 300k 55ppm: 250k	AR-620LD	1	Used two bags. LD = DV x 10
3	Drum	OPC drum x 1	62/70ppm: 300k 55ppm: 250k	AR-620DM	10	

2. Maintenance parts list

A. USA, Canada

No.	Name	Content	Life			Model name	Packing	Remark
			55cpm	62cpm	70cpm			
1	Maintenance kit 1	Side seal F x 1 Side seal R x 1 MC cleaning unit x 1 Cleaner blade x 1 Drum separation pawl x 4 Screen grid x 1 Toner reception seal x 1 Charging plate x 1 Paper dust removal unit x 1 DV seal x 1 DV side seal F x 1 DV side seal R x 1 Toner filter x 1	250K	300K	300K	AR-620KA	10	
2	Maintenance kit 2	Transfer cleaning roller x 1 Transfer belt x 1 Transfer roller x 1 Transfer gear x 1	250K	300K	300K	AR-620KB	10	
3	Upper heat reoller kit	Upper heat roller x 1 Fusing separation pawl (Upper) x 6	250K	300K	300K	AR-620UH	10	
4	Lower heat roller kit	Lower heat roller x 1 Fusing separation pawl (lower) x 2	250K	300K	300K	AR-620LH	10	
5	Cleaner blade	Cleaner blade x 10	250K (x 10)	300K (x 10)	300K (x 10)	AR-620CB	1	AR-620CB = (AR-620BL) x 10
6	Cleaning roller kit (55/62cpm model)	Scraper unit x 10 Sub heat roller cleaning unit x 10	250K (x 10)	300K (x 10)	–	AR-620CR	1	AR-620CR = (AR-620RC) x 10
7	Maintenance kit 3 (70cpm model)	Cleaning sheet x 10 Oil roller x 10 Cleaning roller bearing x 20 Pressure cleaning plate x 10	–	–	300K	AR-700CR	1	
8	Heat roller kit	Sub heat roller x 1 Heat roller bearing x 2	250K	300K	300K	AR-620HR	10	
9	DSPF roller kit	SPF paper feed roller x 1 SPF take-up roller x 1 SPF reverse roller x 1	100K	100K	100K	AR-620DF	10	
10	Paper feed roller kit	Main unit paper feed roller x 1 Main unit paper feed take-up roller x 1 Main unit paper feed reverse roller x 1	100K	100K	100K	AR-620RT	10	

No.	Name	Content	Life			Model name	Packing	Remark
			55cpm	62cpm	70cpm			
11	Staple cartridge	Finisher staple x 3	5,000 times x 3	5,000 times x 3	5,000 times x 3	SF-SC11	20	Cartridge for AR-F15 (Common with the cartridge for AR-F11/ F12)
12	Staple cartridge	Saddle finisher staple x 3	2,000 times x 3	2,000 times x 3	2,000 times x 3	AR-SC3	40	Cartridge for AR-F16 (Common with the cartridge for AR-F12)

B. Europe affiliates (Including East Europe, Russia) Australia/New Zealand/UK

No.	Part name	Content	Life			Model name	Packing	Remark
			55cpm	62cpm	70cpm			
1	Maintenance kit 1	Side seal F x 1 Side seal R x 1 MC cleaning unit x 1 Cleaner blade x 1 Drum separation pawl x 4 Screen grid x 1 Toner reception seal x 1 Charging plate x 1 Paper dust removal unit x 1 DV seal x 1 DV side seal F x 1 DV side seal R x 1 Toner filter x 1	250K	300K	300K	AR-620KA	10	
2	Maintenance kit 2	Transfer cleaning roller x 1 Transfer belt x 1 Transfer roller x 1 Transfer gear x 1	250K	300K	300K	AR-620KB	10	
3	Maintenance kit 3 (55/62cpm model)	Upper heat roller x 1 Lower heat roller x 1 Fusing separation pawl (Upper) x 6 Fusing separation pawl (lower) x 4 Scraper unit x 1 Sub heat roller cleaning unit x 1 Sub heat roller x 1 Heat roller bearing x 2	250K	300K	–	AR-620KC	5	
	Maintenance kit 3 (70cpm model)	Upper heat roller x 1 Lower heat roller x 1 Fusing separation pawl (Upper) x 6 Fusing separation pawl (lower) x 4 Cleaning sheet x 1 Oil roller x 1 Cleaning roller bearing x 2 Pressure cleaning plate x 1 Sub heat roller x 1 Heat roller bearing x 2	–	–	300K	AR-700KC	5	
4	DSPF roller kit	SPF paper feed roller x 1 SPF take-up roller x 1 SPF reverse roller x 1	100K	100K	100K	AR-620DF	10	
5	Paper feed roller kit	Main unit paper feed roller x 1 Main unit paper feed take-up roller x 1 Main unit paper feed reverse roller x 1	100K	100K	100K	AR-620RT	10	
6	Staple cartridge	Finisher staple x 3	5,000 times x 3	5,000 times x 3	5,000 times x 3	SF-SC11	20	Cartridge for AR-F15 (Common with the cartridge for AR-F11/ F12)
7	Staple cartridge	Saddle finisher staple x 3	2,000 times x 3	2,000 times x 3	2,000 times x 3	AR-SC3	40	Cartridge for AR-F16 (Common with the cartridge for AR-F12)

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C. Middle East/Asia/South and Central America

No.	Part name	Content		Life			Model name	Packing	Remark
				55cpm	62cpm	70cpm			
1	Maintenance kit 1	Side seal F	x 1	250K	300K	300K	AR-620KA	10	
		Side seal R	x 1						
		MC cleaning unit	x 1						
		Cleaner blade	x 1						
		Drum separation pawl	x 4						
		Screen grid	x 1						
		Toner reception seal	x 1						
		Charging plate	x 1						
		Paper dust removal unit	x 1						
		DV seal	x 1						
		DV side seal F	x 1						
		DV side seal R	x 1						
		Toner filter	x 1						
2	Maintenance kit 2	Transfer cleaning roller	x 1	250K	300K	300K	AR-620KB	10	
		Transfer belt	x 1						
		Transfer roller	x 1						
		Transfer gear	x 1						
3	Maintenance kit 3 (55/62cpm model)	Upper heat roller	x 1	250K	300K	–	AR-620KC	5	
		Lower heat roller	x 1						
		Fusing separation pawl (Upper)	x 6						
		Fusing separation pawl (lower)	x 4						
		Scraper unit	x 1						
		Sub heat roller cleaning unit	x 1						
		Sub heat roller	x 1						
		Heat roller bearing	x 2						
	Maintenance kit 3 (70cpm model)	Upper heat roller	x 1	–	–	300K	AR-700KC	5	
		Lower heat roller	x 1						
		Fusing separation pawl (Upper)	x 6						
		Fusing separation pawl (lower)	x 4						
		Cleaning sheet	x 1						
		Oil roller	x 1						
		Cleaning roller bearing	x 2						
		Pressure cleaning plate	x 1						
		Sub heat roller	x 1						
		Heat roller bearing	x 2						
4	DSPF roller kit	SPF paper feed roller	x 1	100K	100K	100K	AR-620DF	10	
		SPF take-up roller	x 1						
		SPF reverse roller	x 1						
5	Paper feed roller kit	Main unit paper feed roller	x 1	100K	100K	100K	AR-620RT	10	
		Main unit paper feed take-up roller	x 1						
		Main unit paper feed reverse roller	x 1						
6	Staple cartridge	Finisher staple	x 3	5,000 times x 3	5,000 times x 3	5,000 times x 3	SF-SC11	20	Cartridge for AR-F15 (Common with the cartridge for AR-F11/ F12)
7	Staple cartridge	Saddle finisher staple	x 3	2,000 times x 3	2,000 times x 3	2,000 times x 3	AR-SC3	40	Cartridge for AR-F16 (Common with the cartridge for AR-F12)

⚠ : Feb. 9 2004

D. China

No.	Part name	Content		Life		Model name	Packing	Packing
				62cpm	70cpm			
1	Maintenance kit 1	Side seal F	x 1	300K	300K	AR-620KA	10	
		Side seal R	x 1					
		MC cleaning unit	x 1					
		Cleaner blade	x 1					
		Drum separation pawl	x 4					
		Screen grid	x 1					
		Toner reception seal	x 1					
		Charging plate	x 1					
		Paper dust removal unit	x 1					
		DV seal	x 1					
		DV side seal F	x 1					
		DV side seal R	x 1					
		Toner filter	x 1					
2	Maintenance kit 2	Transfer cleaning roller	x 1	300K	300K	AR-620KB	10	
		Transfer belt	x 1					
		Transfer roller	x 1					
		Transfer gear	x 1					
3	Maintenance kit 3 (55/62cpm model)	Upper heat roller	x 1	300K	–	AR-620KC	5	
		Lower heat roller	x 1					
		Fusing separation pawl (Upper)	x 6					
		Fusing separation pawl (lower)	x 4					
		Scraper unit	x 1					
		Sub heat roller cleaning unit	x 1					
		Heat roller bearing	x 2					
	Maintenance kit 3 (70cpm model)	Upper heat roller	x 1	–	300K	AR-700KC	5	
		Lower heat roller	x 1					
		Fusing separation pawl (Upper)	x 6					
		Fusing separation pawl (lower)	x 4					
		Heat seal plate N assembly	x 1					
		Oil roller	x 1					
		Cleaning roller bearing	x 2					
		Pressure cleaning plate	x 1					
		Sub heat roller	x 1					
		Heat roller bearing	x 2					
4	DSPF roller kit	SPF paper feed roller	x 1	100K	100K	AR-620DF	10	
		SPF take-up roller	x 1					
		SPF reverse roller	x 1					
5	Paper feed roller kit	Main unit paper feed roller	x 1	100K	100K	AR-620RT	10	
		Main unit paper feed take-up roller	x 1					
		Main unit paper feed reverse roller	x 1					
6	Staple cartridge	Finisher staple	x 3	5,000 times x 3	5,000 times x 3	SF-SC11	20	Cartridge for AR-F15 (Common with the cartridge for AR-F11/F12)
7	Staple cartridge	Saddle finisher staple	x 3	2,000 times x 3	2,000 times x 3	AR-SC3	40	Cartridge for AR-F16 (Common with the cartridge for AR-F12)

⚠ : Feb. 9 2004

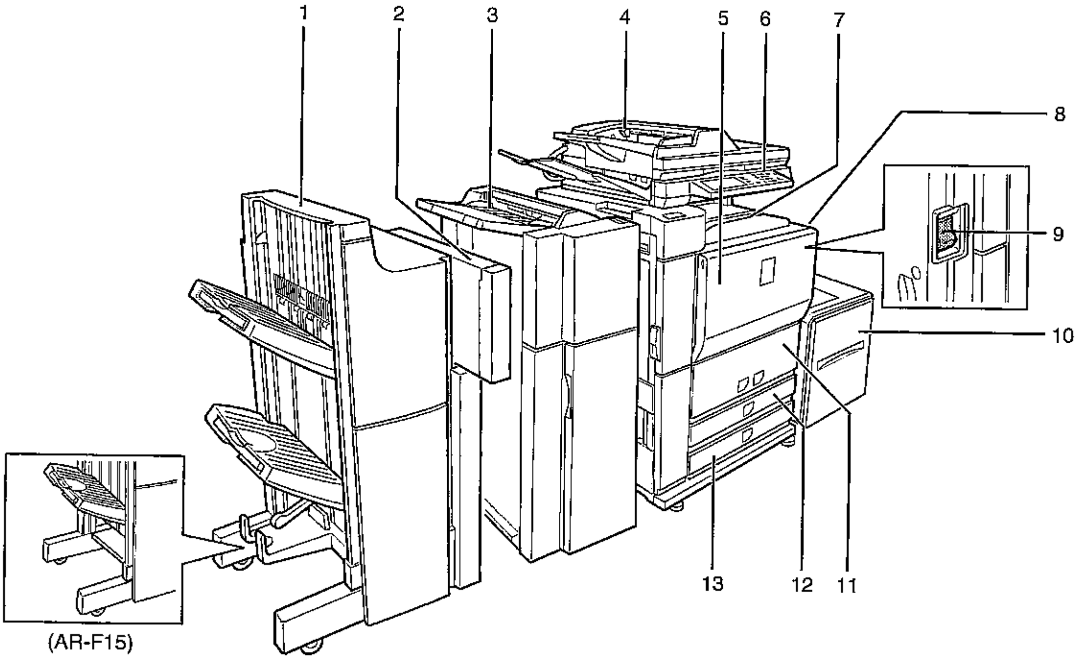
E. Taiwan

No.	Part name	Content		Life			Model name	Packing	Packing
				55cpm	62cpm	70cpm			
1	Maintenance kit 1	Side seal F	x 1	250K	300K	300K	AR-620KA	10	
		Side seal R	x 1						
		MC cleaning unit	x 1						
		Cleaner blade	x 1						
		Drum separation pawl	x 4						
		Screen grid	x 1						
		Toner reception seal	x 1						
		Charging plate	x 1						
		Paper dust removal unit	x 1						
		DV seal	x 1						
		DV side seal F	x 1						
		DV side seal R	x 1						
		Toner filter	x 1						
2	Maintenance kit 2	Transfer cleaning roller	x 1	250K	300K	300K	AR-620KB	10	
		Transfer belt	x 1						
		Transfer roller	x 1						
		Transfer gear	x 1						
3	Maintenance kit 3 (55/62cpm model)	Upper heat roller	x 1	250K	300K	–	AR-620KC	5	
		Lower heat roller	x 1						
		Fusing separation pawl (Upper)	x 6						
		Fusing separation pawl (lower)	x 4						
		Scraper unit	x 1						
		Sub heat roller cleaning unit	x 1						
		Heat roller bearing	x 2						
	Maintenance kit 3 (70cpm model)	Upper heat roller	x 1	–	–	300K	AR-700KC	5	
		Lower heat roller	x 1						
		Fusing separation pawl (Upper)	x 6						
		Fusing separation pawl (lower)	x 4						
		Cleaning sheet	x 1						
		Oil roller	x 1						
		Cleaning roller bearing	x 2						
		Pressure cleaning plate	x 1						
		Sub heat roller	x 1						
		Heat roller bearing	x 2						
4	DSPF roller kit	SPF paper feed roller	x 1	100K	100K	100K	AR-620DF	10	
		SPF take-up roller	x 1						
		SPF reverse roller	x 1						
5	Paper feed roller kit	Main unit paper feed roller	x 1	100K	100K	100K	AR-620RT	10	
		Main unit paper feed take-up roller	x 1						
		Main unit paper feed reverse roller	x 1						
6	Staple cartridge	Finisher staple	x 3	5,000 times x 3	5,000 times x 3	5,000 times x 3	SF-SC11	20	Cartridge for AR-F15 (Common with the cartridge for AR-F11/F12)
7	Staple cartridge	Saddle finisher staple	x 3	2,000 times x 3	2,000 times x 3	2,000 times x 3	AR-SC3	40	Cartridge for AR-F16 (Common with the cartridge for AR-F12)

[5] EXTERNAL VIEW AND INTERNAL STRUCTURE

1. External view and operation parts

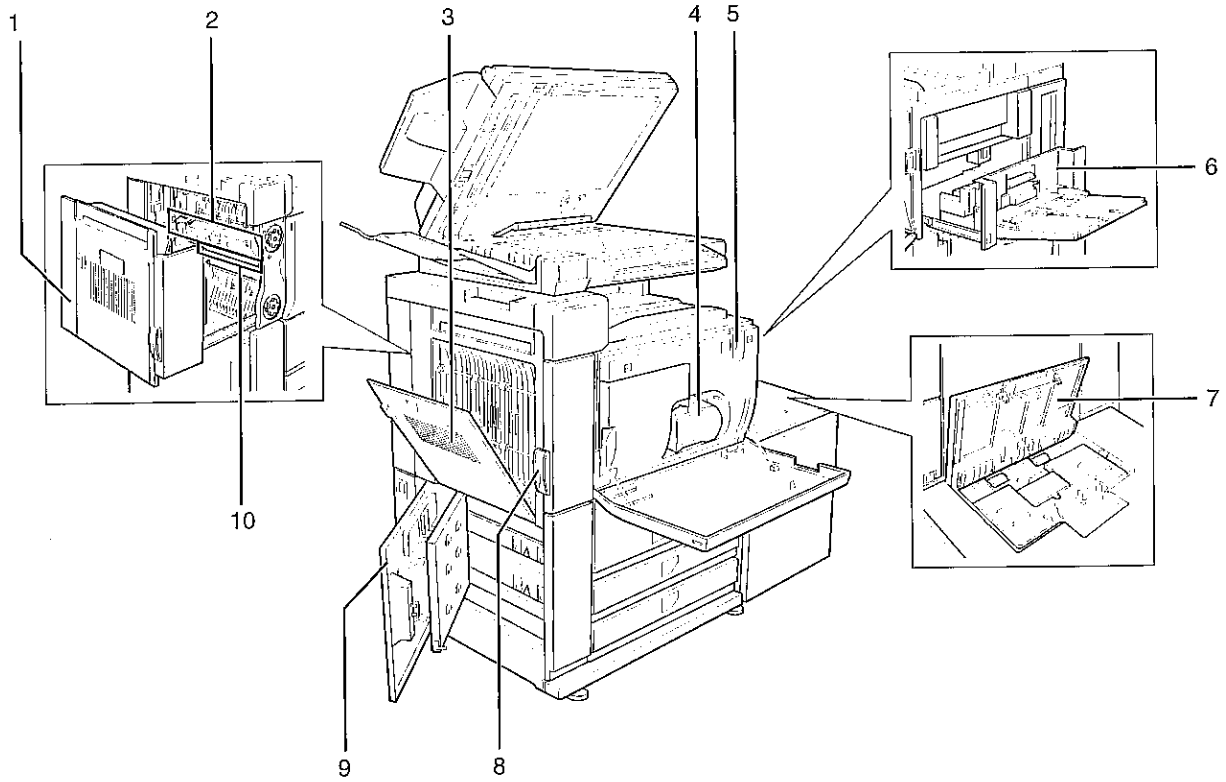
A. External view and external operation parts



<table>
<tr><th rowspan="2">No.</th><th colspan="2">Parts</th><th rowspan="2">Note</th></tr>
<tr><th>Name</th><th>Function/Operation</th></tr>
<tr><td>1</td><td>Saddle stitch finisher (AR-F16) *1 / Finisher (AR-F15) *1</td><td>The finisher and the saddle stitch finisher include the offset function, which offsets each set of copies from the preceding set for easy separation. Each set of sorted copies can also be stapled. The saddle stitch finisher can automatically staple at the center line of a set of copies and fold the pages to create a pamphlet.
A punch unit can be installed to add punch holes to copioes, and an inserter can be installed to insert blank pages at specified pages.</td><td></td></tr>
<tr><td>2</td><td>Punch module (AR-PN4A) *1</td><td>Adds punch holes to printed pages.</td><td></td></tr>
<tr><td>3</td><td>Inserter (AR-CF2) *1</td><td>The inserter enables blank sheets or printed sheets to be added to copy and print output as covers or inserts without printing. Printed output can also be fed one set at a time from the inserter for stapling or punching without performing stapling or staple sorting finishing.</td><td></td></tr>
<tr><td>4</td><td>Automatic document feeder</td><td>This automatically feeds and scans multiple sheet originals. Both sides of two-sided originals can be scanned at once.</td><td></td></tr>
<tr><td>5</td><td>Front cover</td><td>Open to replace toner cartridge.</td><td></td></tr>
<tr><td>6</td><td>Operation panel</td><td>Performs various setting, display, and simulation operations.</td><td></td></tr>
<tr><td>7</td><td>Center tray</td><td>Finished sheets are deposited here</td><td></td></tr>
<tr><td>8</td><td>Bypass tray</td><td>Special papers (including transparency film) and copy paper can be fed from the bypass tray.</td><td></td></tr>
<tr><td>9</td><td>Power switch</td><td>Turns the power on and off.
If the power does not come on when the power switch is turned on, check the main power switch to see if it is turned on.</td><td></td></tr>
<tr><td>10</td><td>Paper feed tray 5 (Large capasity tray (AR-LC6)) *1</td><td>The large capacity tray can hold up to 3,500 sheets of commonly used (8-1/2" x 11", B5, A4) SHARP standard paper (20 lbs. (80 g/m^2)).</td><td></td></tr>
<tr><td>11</td><td>Paper feed trays 1, 2</td><td>The trays hold paper. Approximately 800 sheets of standard 8-1/2" x 11" or A4 size paper (20 lbs. (80 g/m^2)) can be loaded in tray 1, and approximately 1200 sheets of standard 8-1/2" x 11", A4 or B5 size paper (20 lbs. (80 g/m^2)) can be loaded in tray 2.</td><td></td></tr>
<tr><td>12</td><td>Paper feed tray 3</td><td>Tray 3 holds paper. Approximately 500 sheets of standard (20 lbs. (80 g/m^2)) paper can be loaded in this tray. Tabbed paper and transparencies can also be loaded.</td><td></td></tr>
<tr><td>13</td><td>Paper feed tray 4</td><td>Tray 4 holds paper. Approximately 500 sheets of standard (20 lbs. (80 g/m^2)) paper can be loaded in this tray.</td><td></td></tr>
</table>

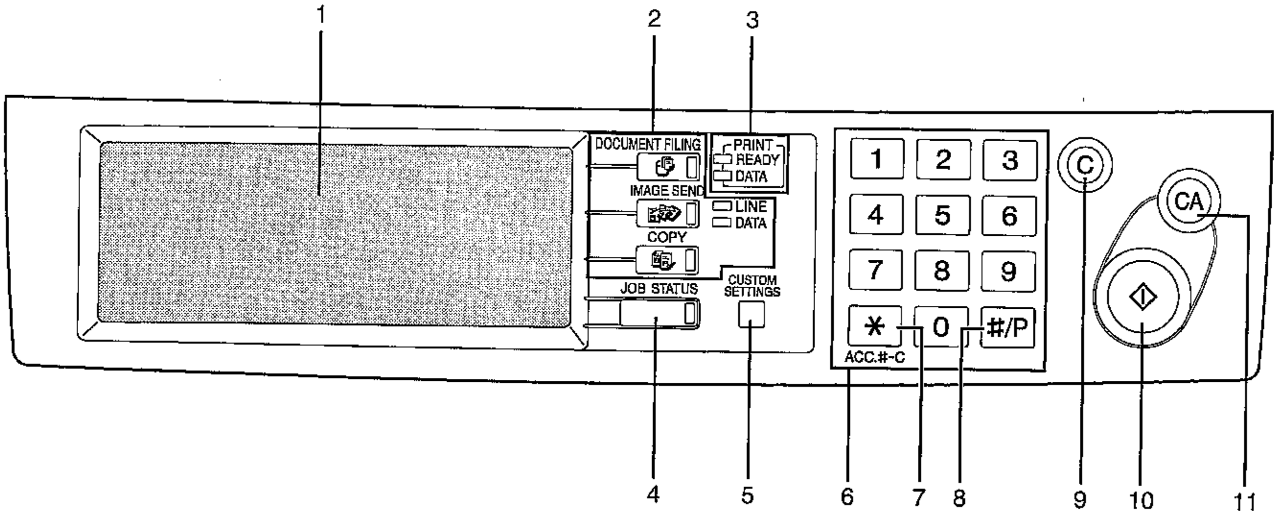
*1: 1, 2, 3 and are peripheral devices. For information on these devices, see the explanations of the devices in the manual.

B. Internal operation parts



No.	Parts		Note
	Name	Function/Operation	
1	Duplex unit	Open this cover to remove a misfeed from the fusing unit area.	
2	Fusing unit	Toner images are fused here.	The fusing unit is hot. Take care in removing misfed paper.
3	Cover of the duplex unit	Open when a misfeed has occurred in duplex unit.	
4	Toner cartridge	The toner cartridge must be replaced when indicated on the operation panel.	
5	Main power switch	Keep this switch turned on when the fax option or network scanner option is installed.	
6	Right side cover	Open when a misfeed has occurred in bypass tray or large capacity tray.	
7	Upper cover of large capacity tray	Open when a misfeed has occurred in large capacity tray.	
8	Left side cover release	Push this knob up to open the left side cover.	
9	Left cover of paper drawer	Open this cover to remove paper misfed in the tray 3 and tray 4.	
10	Photoconductive drum	Images are formed on the photoconductive drum.	Do not touch or damage the photoconductive drum.

C. Operation, display parts



No.	Parts		Note
	Name	Function/Operation	
1	Touch panel	The machine status, messages and touch keys are displayed on the panel. The document filing, copy, network scanner*1 , and fax*2 functions are used by switching to the screen for the desired function.	
2	Mode select keys and indicators	Use to change modes and the corresponding display on the touch panel. **[DOCUMENT FILING] key** Press to select the document filing mode. **[IMAGE SEND] key/LINE indicator/DATA indicator** Press to enter the network scan mode when the network scanner function is added. **[COPY] key** Press to select the copy mode.	
3	[PRINT] key/READY indicator/ DATA indicator	Press to enter the print mode. **READY indicator** Print data can be received when this indicator is lit. **DATA indicator** Lights up or blinks when print data is being received. Also lights up or blinks when printing is being performed.	
4	[JOB STATUS] key	Press to display the current job status.	
5	[CUSTOM SETTINGS] key	This is used to store, edit, and delete user names and folder names for the document filing function, and to configure the key operator programs and printer configuration settings.	
6	Numeric keys	Use to enter number values for various settings.	
7	[ ] key ([ACC.#-C] key)	This key is used in copy mode, document filing mode, network scanner mode*1, and fax mode*2.	
8	[#/P] key	This is used as a program key when using the copy function, and to dial when using the fax function*2.	
9	[C] key	This key is used in copy mode, document filing mode, network scanner mode*1, and fax mode*2.	
10	[START] key	Use this key to start copying in copy mode, scan a document in network scanner mode*1, or scan a document for transmission in fax mode*2.	
11	[CA] key	This key is used in copy mode, document filing mode, network scanner mode*1, and fax mode*2. Use the key to cancel settings and perform an operation from the initial machine state.	

*1: When the network scanner option is installed.

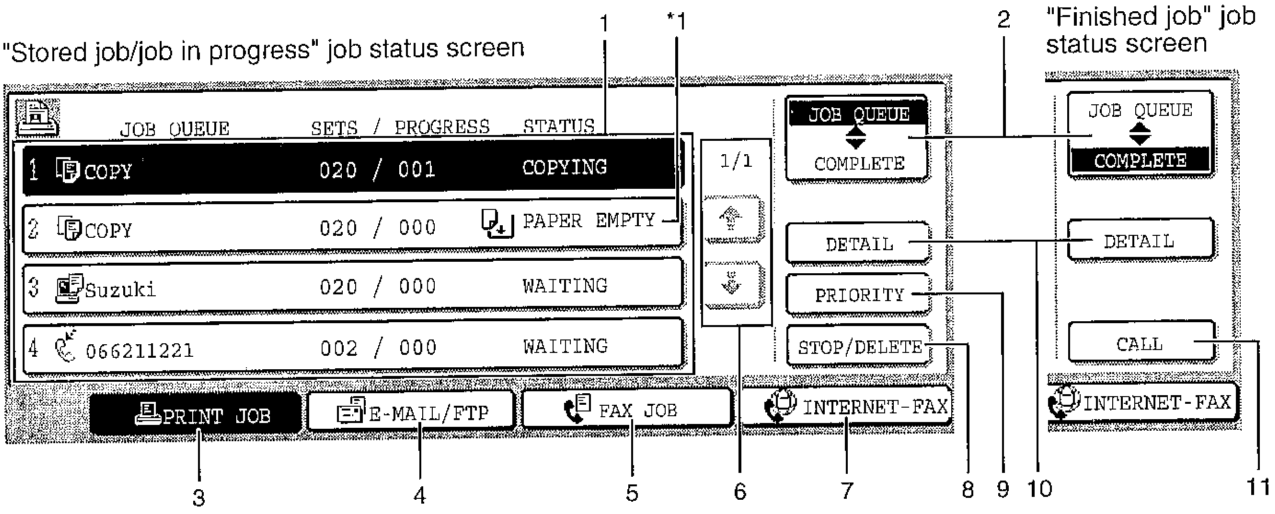
*2: When the fax option is installed.

D. Job status screen (common to print, copy, network scan and internet fax)

This screen is displayed when the [JOB STATUS] key on the operation panel is pressed.

A job list showing the current job at the top of the job queue or a list showing completed jobs can be displayed.

The contents of jobs can be viewed or jobs can be deleted from the queue.



JOB QUEUE	SETS / PROGRESS	STATUS
1 COPY	020 / 001	COPYING
2 COPY	020 / 000	PAPER EMPTY
3 Suzuki	020 / 000	WAITING
4 066211221	002 / 000	WAITING

No.	(Displayed in the touch panel)		Note
	Name	Function/Operation	
1	Job list	The displayed jobs in the job list are themselves operation keys. To cancel printing or to give a job the highest print priority, touch the relevant job key to select the job and execute the desired operation using the keys described in 8 and 9. This shows the current job and the jobs waiting to be run. The icons to the left of the jobs in the queue show the job mode. The document filing reprint job icon is highlighted. Note that the icon does not become highlighted during retransmission of a fax/ image transmission job. Print mode Copy mode E-MAIL/FTP mode: Scan to e-mail job Scan to FTP job Scan to Sharpdesk job Fax mode: Fax send job Fax reception job PC-FAX send job Internet Fax mode i-Fax send job i-Fax reception job PC-Internet Fax send job	*1:"PAPER EMPTY" in the job status display When a job status display indicates "PAPER EMPTY", the specified paper size for the job is not loaded in any of the trays. In this case, the job will be suspended until the required paper is loaded. Other stored jobs will be printed (if possible) until the required paper is loaded. (Other jobs will not be printed if the paper runs out during printing.) If you need to change the paper size because the specified paper size is not available, touch the current job key to select it and then touch the [DETAIL] key described in 9.
2	Mode select key	This switches the job list display between "JOB QUEUE" and "COMPLETE". "JOB QUEUE": Shows stored jobs and the job in progress. "COMPLETE": Shows finished jobs. Files saved in the automatic temporary save folder by the document filing function and finished broadcast transmission jobs appear as keys in the finished job screen. An automatic temporary save file in the finished job screen or the [Filing] key can be touched, followed by the [CALL] key, to call up a finished job and print or transmit it. A finished broadcast transmission job key can be touched followed by the [DETAIL] key to check the result of the transmission.	
3	[PRINT JOB] key	This displays the print job list of print mode (copying, printing, fax reception, Internet fax reception, and self printing).	

No.	(Displayed in the touch panel)		Note
	Name	Function/Operation	
4	[E-MAIL/FTP] key	This displays the transmission status and finished jobs of scan mode (Scan to e-mail, Scan to FTP, and Scan to SharpDesk) when the network scanner option is installed.	
5	[FAX JOB] key	This displays the transmission/reception status and finished jobs of fax mode (fax and PC-Fax) when the fax option is installed.	
6	Display switching keys	Use to switch the page of the displayed job list.	
7	[INTERNET-FAX] key	This displays the transmission/reception status and finished jobs of Internet fax mode and PC Internet fax mode when the network scanner option is installed.	
8	[STOP/DELETE] key	Use to cancel or delete the current job or delete the selected reserved job. Note that printing of received faxes and received Internet faxes cannot be canceled or deleted.	
9	[PRIORITY] key	A stored job in the "JOB QUEUE" job list can be printed ahead of all other stored jobs by selecting the job and then touching this key.	
10	[DETAIL] key	This shows detailed information on the selected job. Files saved in the automatic temporary save folder by the document filing function and finished broadcast transmission jobs appear as keys in the finished job screen. An automatic temporary save file in the finished job screen or the [Filing] key can be touched, followed by the [CALL] key, to call up a finished job and print or transmit it. A finished broadcast transmission job key can be touched followed by the [DETAIL] key to check the result of the transmission.	
11	[CALL] key	When this key is touched after selecting a temporarily stored job in the finished job screen, the "JOB SETTINGS" menu screen appears to let you resend or reprint the finished job.	

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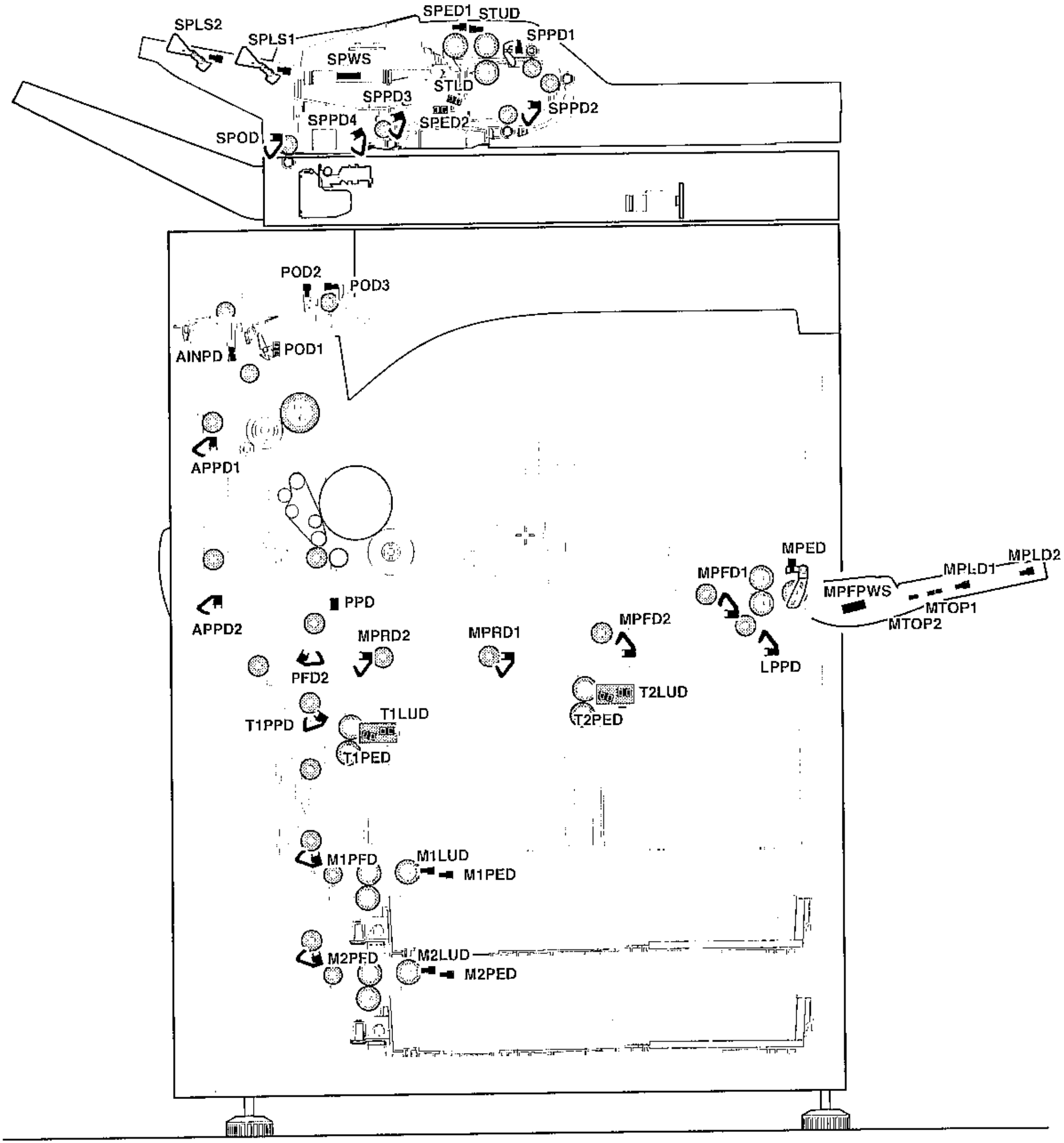
2. Function parts

A. Sensor/detector


SPLS2
SPLS1
SPED1
STUD
SPPD1
SPWS
STLD
SPPD3
SPPD4
SPED2
SPPD2
SPOD
POD2
POD3
AINPD
POD1
APPD1
APPD2
PPD
MPRD2
MPRD1
MPFD2
MPFD1
MPED
MPLD2
MPLD1
MPFPWS
MTOP1
MTOP2
LPPD
PFD2
T2LUD
T2PED
T1PPD
T1LUD
T1PED
M1PFD
M1LUD
M1PED
M2PFD
M2LUD
M2PED

Code	Signal name	Name	Function/Operation	Type	Connector level "L"	Connector level "H"	PWB name	Note
AINPD	AINPD	Duplex (ADU) paper entry detector	Duplex (ADU) paper entry detection, detection of paper exit to finisher	Transmission type	Paper pass	-	PCU PWB	Paper transport system sensor
APPD1	APPD1	Duplex (ADU) paper pass detector 1	Duplex (ADU) upstream paper pass detection	Transmission type	Paper pass	-	PCU PWB	Paper transport system sensor
APPD2	APPD2	Duplex (ADU) paper pass detector 2	Duplex (ADU) midstream paper pass detection	Transmission type	Paper pass	-	PCU PWB	Paper transport system sensor
⚠ LPPD	LPPD	LCC paper pass detector	Detection of paper entry from LCC	Transmission type	Paper pass		PCU PWB	Paper transport system sensor
⚠ M1LUD	M1LUD	Paper tray upper limit detector (Paper feed tray 3)	Paper tray upper limit detection (Paper feed tray 3)	Transmission type	-	Upper limit detection	PCU PWB	Paper feed tray system sensor
M1PED	M1PED	Paper empty detector (Paper feed tray 3)	Paper empty detection (Paper feed tray 3)	Transmission type	Paper empty	Paper present	PCU PWB	Paper feed tray system sensor
M1PFD	M1PFD	Paper pass detector (Paper feed tray 3)	Paper feed tray 3 paper pass detection	Transmission type	Paper pass	-	PCU PWB	Paper transport system sensor
⚠ M2LUD	M2LUD	Paper tray upper limit detector (Paper feed tray 4)	Paper tray upper limit detection (Paper feed tray 4)	Transmission type	-	Upper limit detection	PCU PWB	Paper feed tray system sensor
M2PED	M2PED	Paper empty detector (Paper feed tray 4)	Paper empty detection (Paper feed tray 4)	Transmission type	Paper empty	Paper present	PCU PWB	Paper feed tray system sensor

⚠: Feb. 9 2004

	Code	Signal name	Name	Function/Operation	Type	Connector level		PWB name	Note
						"L"	"H"		
	M2PFD	M2PFD	Paper pass detector (Paper feed tray 4)	Paper feed tray 4 paper pass detection	Transmission type	Paper pass	-	PCU PWB	Paper transport system sensor
⚠	MPED	MPED	Manual feed paper empty detector	Manual paper feed tray paper empty detection	Transmission type	Paper present	Paper empty	PCU PWB	Manual paper feed unit
	MPFD1	MPFD1	Manual feed paper pass detector 1	Manual tray paper pass detection	Transmission type	Paper pass	-	PCU PWB	Paper transport system sensor
	MPFD2	MPFD2	Manual feed paper pass detector 2	Manual tray and LCC paper pass detection	Transmission type	Paper pass	-	PCU PWB	Paper transport system sensor
	MPFPWS	MPFPWS	Manual feed paper width detector	Manual feed paper width detection	Volume resistor	-	-	PCU PWB	Analog detector
	MPLD1	MPLD1	Manual feed paper length detector 1	Manual paper feed tray paper length detection (Paper feed side)	Transmission type	-	Paper present	PCU PWB	Manual paper feed unit
	MPLD2	MPLD2	Manual feed paper length detector 2	Manual paper feed tray paper length detection (Outside)	Transmission type	-	Paper present	PCU PWB	Manual paper feed unit
⚠	MPRD1	MPRD1	Paper feed tray 2 paper pass detector 1	Manual feed/paper feed tray 2/ LCC paper pass detection	Transmission type	Paper pass	-	PCU PWB	Paper transport system sensor
⚠	MPRD2	MPRD2	Paper feed tray 2 paper pass detector 2	Manual feed/paper feed tray 2/ LCC paper pass detection	Transmission type	Paper pass	-	PCU PWB	Paper transport system sensor
	MTOP1	MTOP1	Manual tray pull-out position detector 1	Manual paper feed tray pull-out position detection (Storing position)	Contact type	Storage	-	PCU PWB	Manual paper feed unit
	MTOP2	MTOP2	Manual tray pull-out position detector 2	Manual paper feed tray pull-out position detection (Pull-out position)	Contact type	Pull-out	-	PCU PWB	Manual paper feed unit
⚠	PFD2	PFD2	Paper pass detector 2	Paper pass detection (Left door unit) from duplex (ADU)/ No.1, 3, 4 paper feed	Transmission type	Paper pass	-	PCU PWB	Paper transport system sensor
	POD1	POD1	Paper exit detector 1	Paper exit detection from fusing	Transmission type	Paper pass	-	PCU PWB	Paper transport system sensor
	POD2	POD2	Paper exit detector 2	Paper pass detection from paper exit	Transmission type	Paper pass	-	PCU PWB	Paper transport system sensor
⚠	POD3	POD3	Paper exit detector 3	Paper exit detection to upper section paper exit tray (Full detection)	Transmission type	-	Paper pass (Full detection)	PCU PWB	Paper transport system sensor
	PPD	PPD	Resist roller front paper pass detector	Paper pass detection in front of resist roller	Reflection type	Paper pass	-	PCU PWB	Paper transport system sensor
⚠	SPED1	SPED1	SPF document empty detector	SPF document empty detection	Transmission type	Paper present		SCN PWB	Sensor
⚠	SPED2	SPED2	SPF document detector	SPF document detection	Transmission type	Paper present		SCN PWB	Sensor
	SPLS1	SPLS1	SPF document length detector 1	SPF document length detection (Short)	Transmission type		Paper present	SCN PWB	Sensor
	SPLS2	SPLS2	SPF document length detector 2	SPF document length detection (Long)	Transmission type		Paper present	SCN PWB	Sensor
	SPOD	SPOD	SPF paper exit detector	SPF paper exit detection	Transmission type	Paper exit		SCN PWB	Sensor
	SPPD1	SPPD1	SPF document paper pass detector 1	SPF document paper pass detection 1	Transmission type	Paper present		SCN PWB	Sensor
	SPPD2	SPPD2	SPF document paper pass detector 2	SPF document paper pass detection 2	Transmission type	Paper present		SCN PWB	Sensor
	SPPD3	SPPD3	SPF document paper pass detector 3	SPF document paper pass detection 3	Transmission type	Paper present		SCN PWB	Sensor
	SPPD4	SPPD4	SPF document paper pass detector 4	SPF document paper pass detection 4	Transmission type	Paper present		SCN PWB	Sensor
	SPWS	SPWS	SPF document size (Width) detection analog data detector	SPF document size (Width) detection	Volume resistor	-	-	SCN PWB	Other detector
	STLD	STLD	SPF document tray lower limit detector	SPF document tray lower limit detection	Transmission type		Lower limit	SCN PWB	Sensor
	STUD	STUD	SPF document tray upper limit detector	SPF document tray upper limit detection	Transmission type		Upper limit	SCN PWB	Sensor
	T1LUD	T1LUD	Paper feed tray upper limit detector (Paper feed tray 1)	Paper feed tray upper limit (Paper feed tray 1)	Transmission type	Upper limit	-	PCU PWB	Paper feed tray system sensor
	T1PED	T1PED	Paper empty detector (Paper feed tray 1)	Paper presence detection (Paper feed tray 1)	Transmission type	Paper empty	Paper present	PCU PWB	Paper feed tray system sensor
	T1PPD	T1PPD	Paper pass detector (Paper feed tray 1)	Paper pass detection from paper feed tray 1	Transmission type	Paper pass	-	PCU PWB	Paper transport system sensor
	T2LUD	T2LUD	Paper feed tray upper limit detector (Paper feed tray 2)	Paper feed tray upper limit (Paper feed tray 2)	Transmission type	Upper limit	-	PCU PWB	Paper feed tray system sensor
	T2PED	T2PED	Paper empty detector (Paper feed tray 2)	Paper presence detection (Paper feed tray 2)	Transmission type	Paper empty	Paper present	PCU PWB	Paper feed tray system sensor

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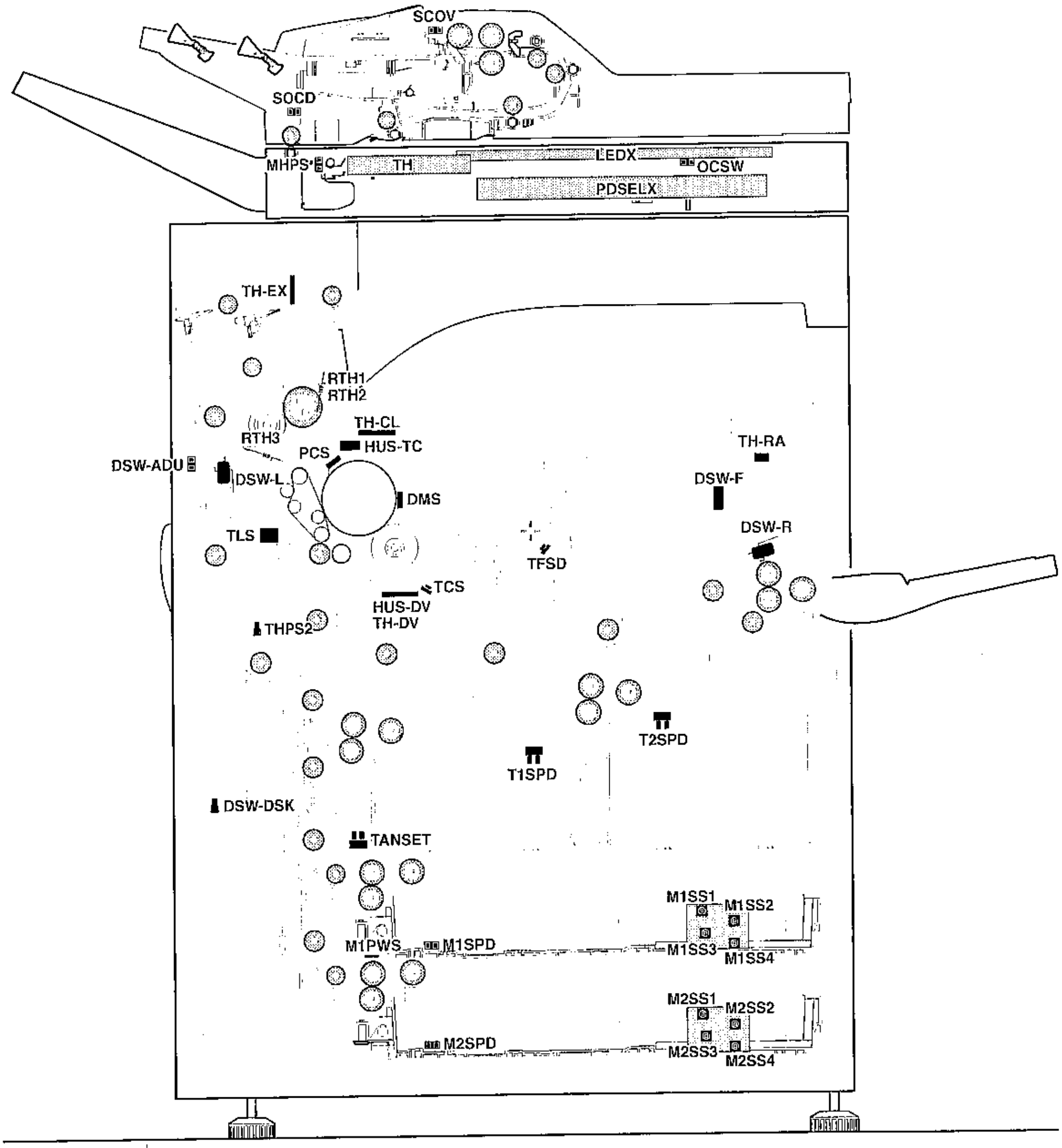
⚠


SCOV
SOCD
MHPS
TH
LEDX
OCSW
PDSELX
TH-EX
RTH1
RTH2
RTH3
TH-CL
HUS-TC
PCS
DSW-ADU
DSW-L
DMS
TLS
TCS
HUS-DV
TH-DV
THPS2
TFSD
TH-RA
DSW-F
DSW-R
T2SPD
T1SPD
DSW-DSK
TANSET
M1SS1
M1SS2
M1SS3
M1SS4
M1PWS
M1SPD
M2SS1
M2SS2
M2SS3
M2SS4
M2SPD

Code	Signal name	Name	Function/Operation	Type	Connector level		PWB name	Note
					"L"	"H"		
CISTH	CISTH	CIS temperature sensor	CIS temperature detection	Thermistor	-	-	SCN PWB	Not used.
DMS	DMS	OPC drum marking sensor signal	OPC drum mark detection	Reflection type	-	-	PCU PWB	Analog detector
DSW-ADU	DSW-ADU	Duplex (ADU) cover open/close detector	Duplex (ADU) cover open/close detection	Transmission type	Duplex (ADU) door open	Duplex (ADU) door open close	PCU PWB	Door switch
DSW-DSK	DSW-DSK	Left door open/close detector (Desk section)	Left door open/close detection (Desk section)	Transmission type	Desk left door open	Desk left door close	PCU PWB	Door switch
DSW-F	DSW-F	Front door open/close detector	Front door open/close detection	Micro switch	Front door and left door open	Front door and left door open	PCU PWB	Door switch
DSW-L	DSW-L	Left door open/close detector	Left door open/close detection	Micro switch	Left door, front door open, manual paper feed unit pull-out	Left door, front door close manual paper feed unit close	PCU PWB	Door switch
DSW-R	DSW-R	Manual feed open/close detector	Manual feed open/close detection	Micro switch (NC)	Left door open or manual unit pulled out	Manual unit insertion	PCU PWB	Door switch
HUS-DV	HUS-DV	Developing humidity sensor	Developing section peripheral humidity detection	Humidity sensor	-	-	PCU PWB	Analog detector
HUS-TC	HUS-TC	Process humidity sensor	Process section peripheral humidity detection	Humidity sensor	-	-	PCU PWB	Analog detector (Not used)
LEDX	LEDX	Document size sensor (Light emitting) (LED)	Document size detection LED	LED	-	-	SCN PWB	Other detector
M1PWS	M1PWS	Paper feed tray paper width detector (Paper feed tray 3)	Multi paper feed tray paper width detection (Paper feed tray 3)	Slide resistor	-	-	PCU PWB	Analog detector

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Code	Signal name	Name	Function/Operation	Type	Connector level		PWB name	Note
					"L"	"H"		
M1SPD	M1SPD	Paper remaining quantity detector (Paper feed tray 3)	Paper remaining quantity detection (Paper feed tray 3)	Transmission type	-	Remaining paper quantity 66% or less	PCU PWB	Paper feed tray remaining quantity sensor
⚠ M1SS1	M1SS1	Paper size detector (Paper feed tray 3)	Paper size detection by combination of ON/OFF of MISS1 - 4	Tact switch			PCU PWB	Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).)
⚠ M1SS2	M1SS2	Paper size detector (Paper feed tray 3)	Paper size detection by combination of ON/OFF of MISS1 - 4	Tact switch			PCU PWB	Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).)
⚠ M1SS3	M1SS3	Paper size detector (Paper feed tray 3)	Paper size detection by combination of ON/OFF of MISS1 - 4	Tact switch			PCU PWB	Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).)
⚠ M1SS4	M1SS4	Paper size detector (Paper feed tray 3)	Paper size detection by combination of ON/OFF of MISS1 - 4	Tact switch			PCU PWB	Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).)
M2SPD	M2SPD	Paper remaining quantity detector (Paper feed tray 4)	Paper remaining quantity detection (Paper feed tray 4)	Transmission type	-	Remaining paper quantity 66% or less	PCU PWB	Paper feed tray remaining quantity sensor
⚠ M2SS1	M2SS1	Paper size detector (Paper feed tray 4)	Paper size detection by combination of ON/OFF of MISS1 - 4	Tact switch			PCU PWB	Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).)
⚠ M2SS2	M2SS2	Paper size detector (Paper feed tray 4)	Paper size detection by combination of ON/OFF of MISS1 - 4	Tact switch			PCU PWB	Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).)
⚠ M2SS3	M2SS3	Paper size detector (Paper feed tray 4)	Paper size detection by combination of ON/OFF of MISS1 - 4	Tact switch			PCU PWB	Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).)
⚠ M2SS4	M2SS4	Paper size detector (Paper feed tray 4)	Paper size detection by combination of ON/OFF of MISS1 - 4	Tact switch			PCU PWB	Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).)
MHPS	MHPS	Scanner home position sensor	Scanner home position detection	Transmission type		Home position	PCU PWB	Sensor
OCSW	OCSW	SPF open/close detector	Document size detection trigger	Transmission type	Close		SCN PWB	Sensor
PCS	PCS	Image density sensor	Detection of density of toner patch on the OPC drum	Reflection type	-	-	PCU PWB	Analog detector
PDSELX	PDSELX	Document size sensor (Light reception) (PT)	Document size detection	Photo transistor	-	-	SCN PWB	Other detector
⚠ RTH1	RTH1	Heat roller temperature sensor (Center section)	Heat roller temperature detection (Center section)	Thermistor	-	-	PCU PWB	Analog detector
⚠ RTH2	RTH2	Heat roller temperature sensor (Edge section)	Heat roller temperature detection (Edge section)	Thermistor	-	-	PCU PWB	Analog detector
RTH3	RTH3	Sub heat roller temperature sensor	Sub heat roller temperature detection	Thermistor	-	-	PCU PWB	Analog detector
SCOV	SCOV	SPF cover switch	SPF cover open/close detection	Transmission type		Close	SCN PWB	Sensor

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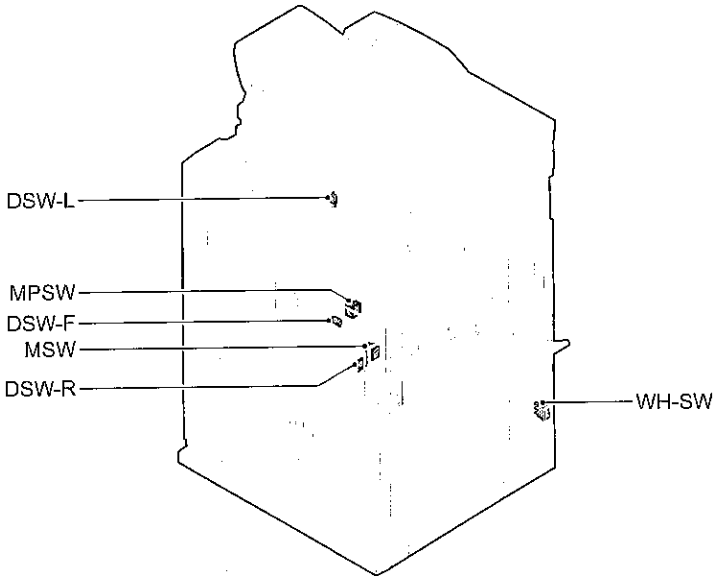
Code	Signal name	Name	Function/Operation	Type	Connector level		PWB name	Note
					"L"	"H"		
SOCD	SOCD	SPF open/close detector	SPF unit open/close detection	Transmission type		Close	SCN PWB	Sensor
T1SPD	T1SPD	Paper remaining quantity detector (Paper feed tray 1)	Paper remaining quantity detection (Paper feed tray 1)	Transmission type	-	Remaining paper quantity 50% or less	PCU PWB	Paper feed tray remaining quantity sensor
T2SPD	T2SPD	Paper remaining quantity detector (Paper feed tray 2)	Paper remaining quantity detection (Paper feed tray 2)	Transmission type	-	Remaining paper quantity 33% or less	PCU PWB	Paper feed tray remaining quantity sensor
TANSET	TANSET	Paper feed tray 1/2 detection signal	Paper feed tray 1, 2 (Tandem tray) insertion detection	Transmission type	Pull-out	Insertion	PCU PWB	Paper feed tray system sensor
TCS	TCS	Toner density sensor	Toner density detection	Magnetic sensor	-	-	PCU PWB	Analog detector
TFSD	TFSD	Toner remaining quantity sensor	Toner hopper toner remaining quantity detection	Magnetic sensor	Remaining quantity great	Remaining quantity small	PCU PWB	Other sensor, switch
TH	TH	LCD thermistor	LCD section temperature detection	Thermistor	-	-	SCN PWB	Other detector
TH-CL	TH-CL	OPC drum temperature sensor	OPC drum peripheral temperature detection	Thermistor	-	-	PCU PWB	Analog detector
TH-DV	TH-DV	Developing humidity sensor	Developing section humidity detection	Thermistor/ humidity	-	-	PCU PWB	Analog detector
TH-EX	TH-EX	Paper exit unit temperature sensor	Paper exit unit peripheral temperature detection (Cooling fan operation monitor)	Thermistor	-	-	PCU PWB	Analog detector
TH-RA	TH-RA	Room temperature sensor	Room temperature detection	Thermistor	-	-	PCU PWB	Analog detector (Not used)
THPS2	THPS2	Transfer belt contact/separation home position sensor 2	Transfer belt separation home position detection 2	Transmission type	-	Contact	PCU PWB	Not used.
TLS	TLS	Waste toner pipe lock detector	Waste toner pipe lock detection	Lead type	-	Lock (Tilt)	PCU PWB	Other sensor, switch
TNCA	TNCA	Waste toner full detection signal	Waste toner full detection	Magnetic sensor	-	-	PCU PWB	Not used.

B. Switch



Code	Signal name	Name	Type	Function/Operation	MODEL	Active condition	NOTE
DSW-F	DSW-F	Front door open/close switch	Micro switch	Front door open/close detection, Main charger power source, Developing bias power line open/close			
DSW-L	DSW-L	Left door open/close switch	Micro switch	Left door open/close detection, Main charger power source, Developing bias power line open/close			
DSW-R	DSW-R	Manual paper feed unit open/close switch	Micro switch	Manual paper feed unit open/close detection, Main charger power source, Developing bias power line open/close			
MPSW		Main power switch	Seesaw switch	Turns ON/OFF all the power sources.			
MSW		Power switch	Seesaw switch	Turns ON/OFF the main DC power source. (Turns ON/OFF the engine power source except for the sub DC power source.)			Shut-off solenoid built-in
WH-SW	WH-SW	Dry heater switch	Seesaw switch	Turns ON/OFF the power line of the dry heater.			

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C. Clutch/solenoid

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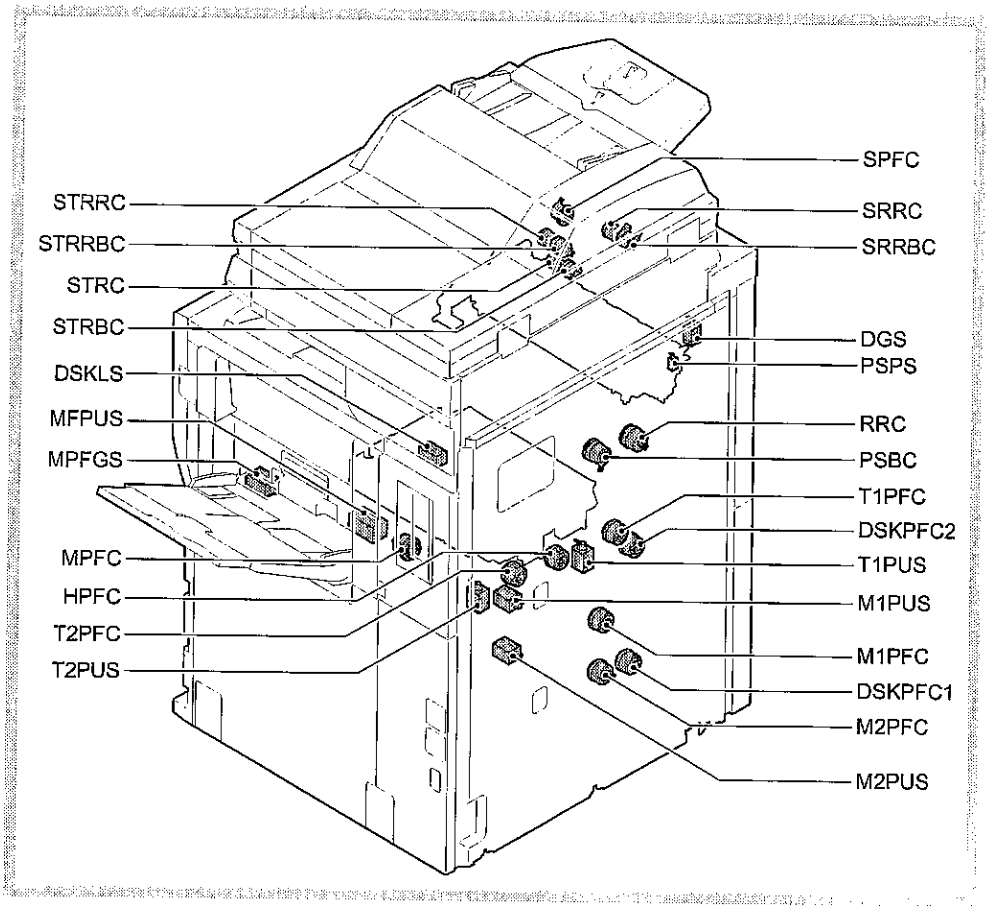

Code	Signal name	Name	Function/Operation	Type	MODEL	NOTE
DGS	DGS	Paper exit gate solenoid	Paper exit gate drive	Electromagnetic solenoid		
DSKLS	DSKLS	Paper guide lock solenoid	Lock the horizontal transport paper guide.	Electromagnetic solenoid		
DSKPFC1	DSKPFC1	Paper feed tray 3/4 paper transport clutch 1	Paper feed tray 3/4 section paper transport roller ON/OFF control	Electromagnetic clutch		
⚠ DSKPFC2	DSKPFC2	Paper feed tray 3/4 paper transport clutch 2	Paper feed tray 3/4 section paper transport roller ON/OFF control	Electromagnetic clutch		
⚠ HPFC	HPFC	Horizontal paper transport clutch	Manual paper feed, paper feed tray 2 section, LCC paper transport roller ON/OFF control	Electromagnetic clutch		
M1PFC	M1PFC	Paper feed clutch (Paper feed tray 3)	Paper freed tray 3 section roller ON/OFF control	Electromagnetic clutch		
M1PUS	M1PUS	Paper pickup solenoid (Paper feed tray 3)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid		
M2PFC	M2PFC	Paper feed clutch (Paper feed tray 4)	Paper freed tray 4 section roller ON/OFF control	Electromagnetic clutch		
M2PUS	M2PUS	Paper pickup solenoid (Paper feed tray 4)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid		
MFPUS	MFPUS	Paper pickup solenoid (Manual paper feed)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid		
MPFC	MPFC	Paper feed clutch (Manual paper feed)	Manual paper feed section paper feed roller ON/OFF control	Electromagnetic clutch		
MPFGS	MPFGS	Manual paper feed gate solenoid	Manual feed gate solenoid open/close control	Electromagnetic solenoid		
PSBC	PSBC	Resist roller brake clutch	Resist roller braking	Electromagnetic clutch		
PSPS	PSPS	Separation solenoid	OPC drum separation pawl drive	Electromagnetic solenoid		
RRC	RRC	Resist roller clutch	Resist roller ON/OFF control	Electromagnetic clutch		

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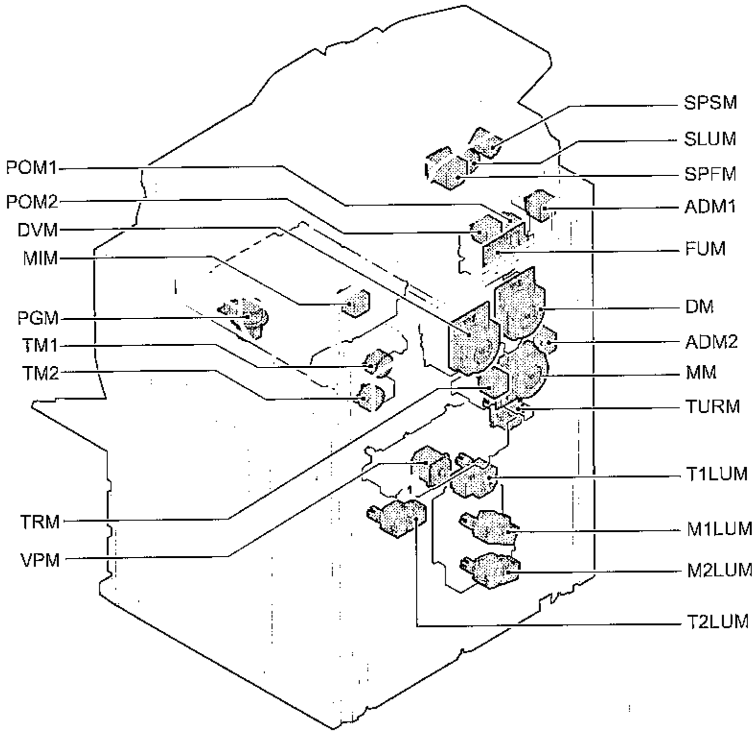
Code	Signal name	Name	Function/Operation	Type	MODEL	NOTE
SPFC	SPFC	SPF paper feed clutch	SPF paper feed section roller ON/OFF control	Electromagnetic clutch		
SRRBC	SRRBC	SPF resist roller brake clutch	SPF resist roller braking	Electromagnetic clutch		
SRRC	SRRC	SPF resist roller clutch	SPF resist roller ON/OFF control	Electromagnetic clutch		
STMPS	STMPS	Stamp solenoid control signal	Stamp drive	Electromagnetic solenoid		
STRBC	STRBC	SPF paper transport roller 2 brake clutch	SPF transport roller 2 braking	Electromagnetic clutch		
STRC	STRC	SPF paper transport roller 2 clutch	SPF transport roller 2 ON/OFF control	Electromagnetic clutch		
⚠ STRRBC	STRRBC	SPF No. 1 resist roller breake clutch	SPF transport roller 3 braking	Electromagnetic clutch		
⚠ STRRC	STRRC	SPF No. 1 resist roller clutch	SPF transport roller 3 ON/OFF control	Electromagnetic clutch		
T1PFC	T1PFC	Paper feed clutch (Paper feed tray 1)	Paper freed tray 1 section roller ON/OFF control	Electromagnetic clutch		
T1PUS	T1PUS	Paper pickup solenoid (Paper feed tray 1)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid		
T2PFC	T2PFC	Paper feed clutch (Paper feed tray 2)	Paper freed tray 2 section roller ON/OFF control	Electromagnetic clutch		
T2PUS	T2PUS	Paper pickup solenoid (Paper feed tray 2)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid		

D. Motor



Code	Signal name	Name	Type	Function/Operation	Active condition	MODEL	NOTE
⚠ ADM1	ADM1	Duplex (ADU) motor 1	Stepping motor	Drives the paper transport roller 2 and the paper transport roller 19.			High speed
ADM2	ADM2	Duplex (ADU) motor 2	Stepping motor	Drives the paper exit rollers 20 and 21.			Selection of Normal speed/ High speed
DM	DM	OPC drum motor	DC brushless motor	Drives the OPC drum and the transfer section.			
DVM	DVM	Developing motor	DC brushless motor	Drives the developing section.			
FUM	FUM	Fusing motor	DC brushless motor	Drives the fusing section.			

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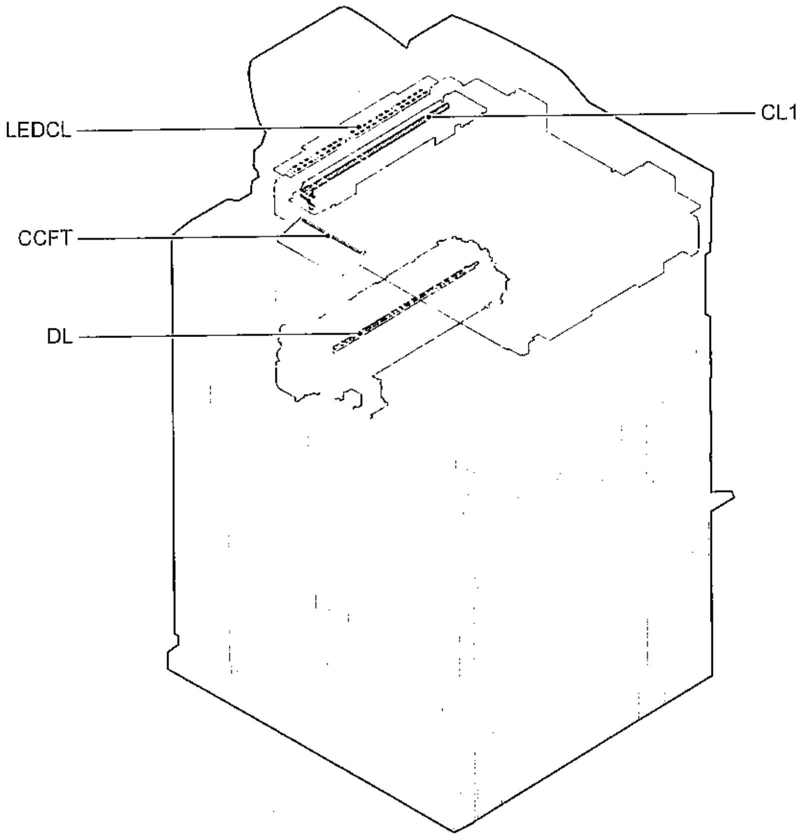
Code	Signal name	Name	Type	Function/Operation	Active condition	MODEL	NOTE
M1LUM	M1LUM	Paper feed tray lift-up motor (Paper feed tray 3)	DC brush motor	Drives the lift plate of the paper feed tray.			Selection of Rotation mode/ Brake mode
M2LUM	M2LUM	Paper feed tray lift-up motor (Paper feed tray 4)	DC brush motor	Drives the lift plate of the paper feed tray.			Selection of Rotation mode/ Brake mode
MIM	MIM	Scanner (reading) motor	Stepping motor	Drives the scanner (reading) section.			
MM	MM	Main motor	DC brushless motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.			
PGM	PGM	LSU motor	DC brushless motor	Drives the scanner (writing) (LSU) unit mirror.			
POM1	POM1	Paper exit motor 1	Stepping motor	Drives the paper transport roller 16.			Selection of Normal speed/ High speed
POM2	POM2	Paper exit motor 2	Stepping motor	Drives the paper exit roller 1.			Selection of Normal speed/ High speed/ Reverse rotation
SLU	/SLUM	SPF paper tray lift motor	Stepping motor	Lifts up and down the SPF paper feed tray.			
▲ SPFM	SPFM1	SPF paper feed motor, paper transport motor	Stepping motor	Drives the paper feed roller and the transport roller.			
▲ SPSM	SPFM2	SPF paper exit motor	Stepping motor	Drives the paper exit roller. (SPF)			
T1LUM	T1LUM	Paper feed tray lift-up motor (Paper feed tray 1)	DC brush motor	Drives the lift plate of the paper feed tray.			Selection of Rotation mode/ Brake mode
T2LUM	T2LUM	Paper feed tray lift-up motor (Paper feed tray 2)	DC brush motor	Drives the lift plate of the paper feed tray.			Selection of Rotation mode/ Brake mode
TM1	TM1	Toner motor 1	Synchronous motor	Transports toner in the toner hopper to the developing unit. / Transports waste toner to the waste toner section.			
TM2	TM2	Toner motor 2	Synchronous motor	Transports toner in the toner bottle to the toner hopper.			
TRM	TRM	Resist roller front drive motor	Stepping motor	Drives the paper transport roller 15.			Normal speed mode/ Resist roller front paper transport timing control (Warp amount control)
▲ TURM	TURM	Transfer separation motor	DC brush motor	Drives and separates the transfer belt.			When executing the process correction and detecting a jam, the transfer belt is separated from the OPC drum.
▲ VPM	VPM	Vertical paper transport motor	Stepping motor	Drives the paper transport rollers 4 and 13.			Normal speed mode

E. Lamp



Code	Signal name	Name	Type	Function/Operation	Active condition	MODEL	NOTE
CL1	CL1	Scanner lamp	Xenon lamp	Radiates lights onto a document for the CCD to scan the document image.			
CCFT	CCFT	LCD backlight	CCFT cool CRT	LCD backlight			
DL	DL	Discharge lamp	Lamp	Discharges electric charges on the OPC drum.			
LEDCL	LEDCL	CIS lamp (LED)	LED	Radiates lights onto a document for the CCD to scan the document image.			

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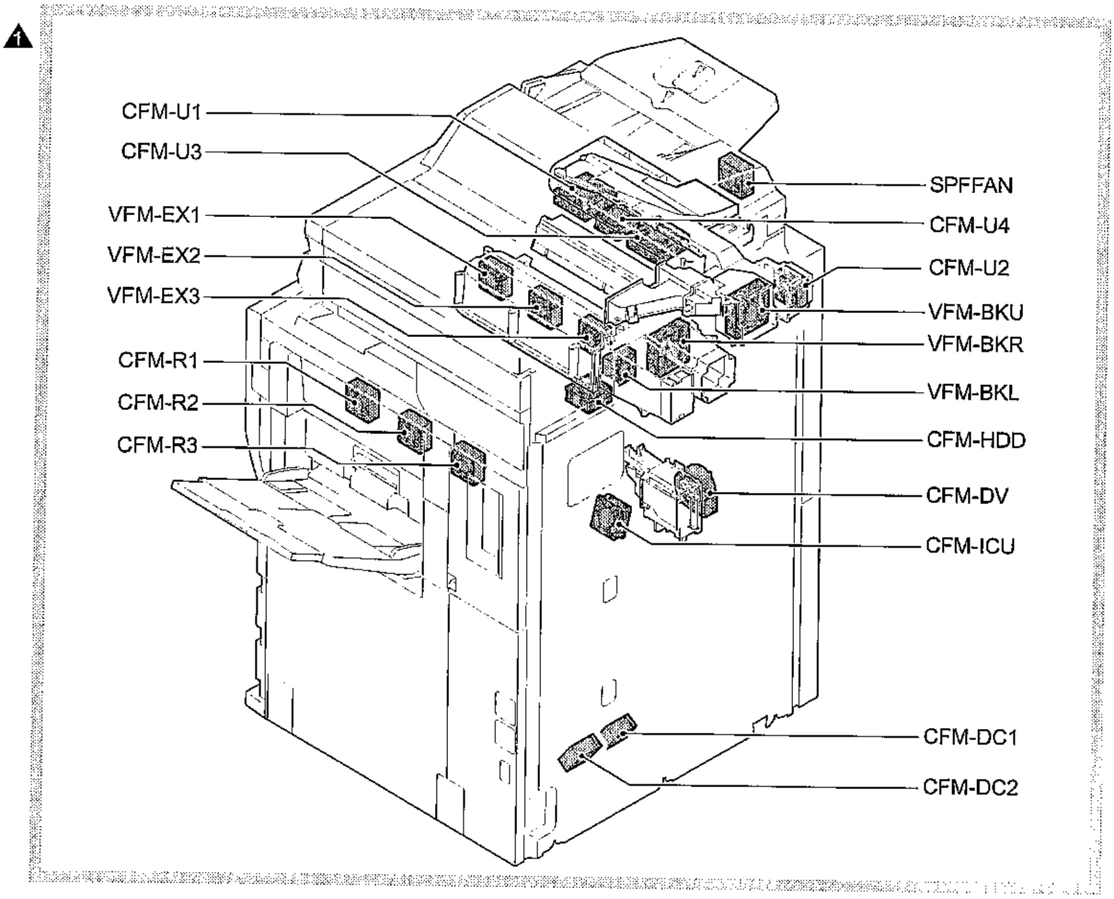
F. Fan motor



Code	Signal name	Name	Type	Function/Operation	Active condition	MODEL	NOTE
CFM-DC1	CFM-DC1	Power cooling fan motor	DC brushless motor	Cools the DC power unit.			
CFM-DC2	CFM-DC2	Power cooling fan motor	DC brushless motor	Cools the DC power unit.			
CFM-DV	CFM-DV	Developing section cooling fan motor	DC brushless motor	Cools the developing section.			PWM control
CFM-HDD	CFM-HDD	HDD cooling fan motor	DC brushless motor	Cools the HDD.			PWM control
CFM-ICU	CFM-ICU	Controller cooling fan motor	DC brushless motor	Cools the controller.			PWM control
CFM-R1	CFM-R1	Process cooling fan motor 1 (LSU/process section)	DC brushless motor	Cools the LSU/ process section.			PWM control
CFM-R2	CFM-R2	Process cooling fan motor 2 (LSU/process section)	DC brushless motor	Cools the LSU/ process section.			PWM control
CFM-R3	CFM-R3	Process cooling fan motor 3 (LSU/process section)	DC brushless motor	Cools the LSU/ process section.			PWM control
CFM-U1	CFM-U1	Fusing section cooling fan motor 1 (Paper exit/duplex (ADU) section) (Top surface)	DC brushless motor	Exhaust heat from the fusing section.			PWM control
CFM-U2	CFM-U2	Fusing section cooling fan motor 2 (Paper exit/duplex (ADU) section) (Paper exit rear side)	DC brushless motor	Exhaust heat from the fusing section.			PWM control
CFM-U3	CFM-U3	Fusing section cooling fan motor 3 (Paper exit/duplex (ADU) section)(Top surface)	DC brushless motor	Exhaust heat from the fusing section.			PWM control
CFM-U4	CFM-U4	Fusing section cooling fan motor 4 (Paper exit/duplex (ADU) section)(Paper cooling fan motor)	DC brushless motor	Cools paper which is discharged to the inner tray.			PWM control
SPFFAN	SPFFAN	SPF fan motor	DC brushless motor	Exhausts heat generated by the motor clutch in the SPF.			PWM control

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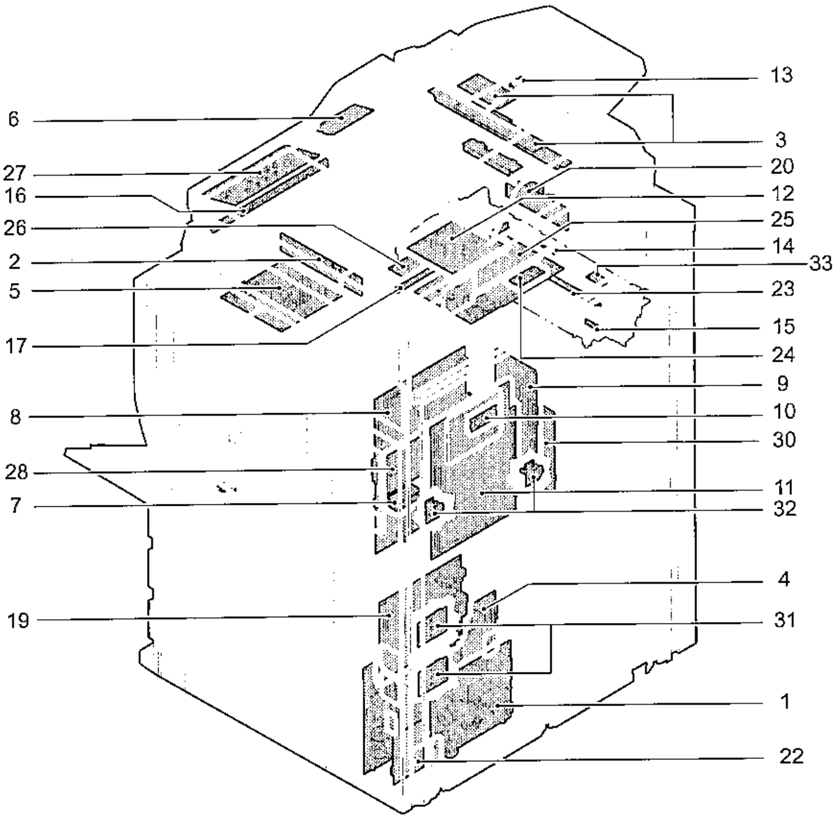
	Code	Signal name	Name	Type	Function/Operation	Active condition	MODEL	NOTE
▲	VFM-BKL	VFM-BKL	Process exhaust fan motor 4	DC brushless motor	Exhaust ozone and heat from the process section.			PWM control
▲	VFM-BKR	VFM-BKR	Fusing exhaust fan motor	DC brushless motor	Exhaust heat from the fusing section.			PWM control
▲	VFM-BKU	VFM-BKU	Paper cooling fan motor	DC brushless motor	Exhaust heat from paper in the inner tray.			PWM control
▲	VFM-EX1	VFM-EX1	Process exhaust fan motor 1 (Front side)	DC brushless motor	Exhaust ozone and heat from the process section.			PWM control
▲	VFM-EX2	VFM-EX2	Process exhaust fan motor 2 (Center)	DC brushless motor	Exhaust ozone and heat from the process section.			PWM control
▲	VFM-EX3	VFM-EX3	Process exhaust fan motor 3 (Rear side)	DC brushless motor	Exhaust ozone and heat from the process section.			PWM control

G. PWB (Main unit section)

▲



	No	Name	Function/Operation	MODEL	NOTE
	1	AC power PWB	Controls the AC power.		
	2	CCD PWB	Scans document images.		
▲	3	CIS control PWB/CIS unit	Scans document images (back surface) and controls the CIS unit.		
	4	DC main power PWB	Generates the DC power.		
	5	DC sub power PWB	Generates the DC power in the power save mode.		
	6	LVDS/INV PWB	Generates the LCD display signal, and generates a high voltage for backlight.		
	7	MFP FLASH ROM PWB	Stores the MFP control program.		
	8	MFP controller PWB	Controls the image-related items and controls all over the machine.		
	9	Mother PWB	Interfaces the MFP control PWB and the PCU PWB.		
	10	PCU FLASH ROM PWB	Stores the PCU control program.		
	11	PCU PWB	Controls the engine section.		
	12	SPF PWB	Drives the SPF section loads./ Interfaces the sensor and detector signals.		
	13	SPF paper width detection PWB	Detects the SPF paper tray paper width.		
	14	Image density sensor PWB	Detects the toner patch density in the image density correction.		
	15	OPC drum mark sensnor PWB	Detects the OPC drum mark.		
	16	Document size detection light reception PWB	Generates the document size detection signal.		

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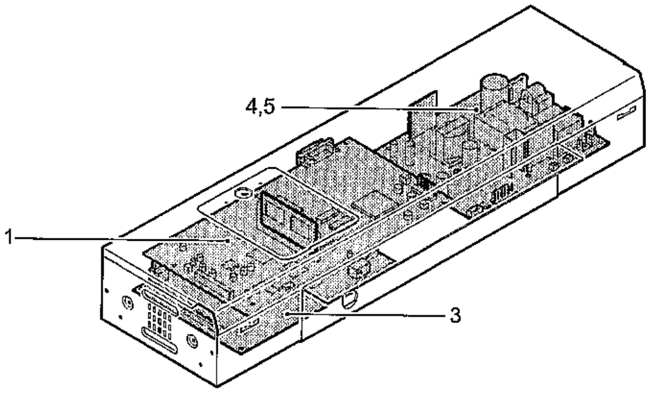
No	Name	Function/Operation	MODEL	NOTE
17	Document size detection light emitting PWB	Generates lights to detect the document size.		
19	High voltage PWB (MC/DV/TC)	Generates the main charger voltage, the developing bias voltage, the transfer voltage and the transfer belt cleaning voltage.		
20	Transfer bias high voltage PWB (TD CL)	Provides the bias voltage for the transfer cleaning roller and the print mode.		
22	Dehumidifier heater relay PWB	Controls ON/OFF of the dehumidifier heater.		
23	Discharge lamp PWB	Generates light for discharging.		
24	Scanner Flash PWB	Stores the scanner control program.		
25	Scanner control PWB	Controls the scanner section.		
26	Scanner relay PWB	Interfaces the scanner control PWB, the CCD PWB, the operation control PWB and the LVDS/INV PWB.		
27	Operationcontrol PWB	Controls the display operation panel.		
28	Soft NIC PWB	Controls the network.		
29	Manual feed paper width detection PWB	Detects the manual paper feed tray paper width.		
30	Driver PWB	Drives the motors.		
31	Paper size detection PWB (Paper feed tray 3, 4)	Detects the paper size.		
32	Detector PWB (Paper feed tray 1, 2)	Detects the paper empty and upper limit tray.		
33	Photoconductor temperature sensor PWB	Temperature detection around the photoconductor		

H. FAX section



No	Name	Function/Operation	MODEL	NOTE
1	MDMC PWB	Controls the Modem and the TEL/LIU PWB.	Modem control	FAX unit
2	FAX IF PWB	• Interfaces the MDMC PWB and the main unit controller PWB. • Installs the FAX image memory. (Expansion memory AR-MM9 can be installed.)		
3	TEL/LIU PWB	• Controls the line. (Call-out, polarity reversion detection, CI detection, line monitor, etc.) • Connection of an externally connected telephone line.		
4	FAX AC power 100	Generates the FAX DC power of 100V.		
5	FAX AC power 200	Generates the FAX DC power of 200V.		

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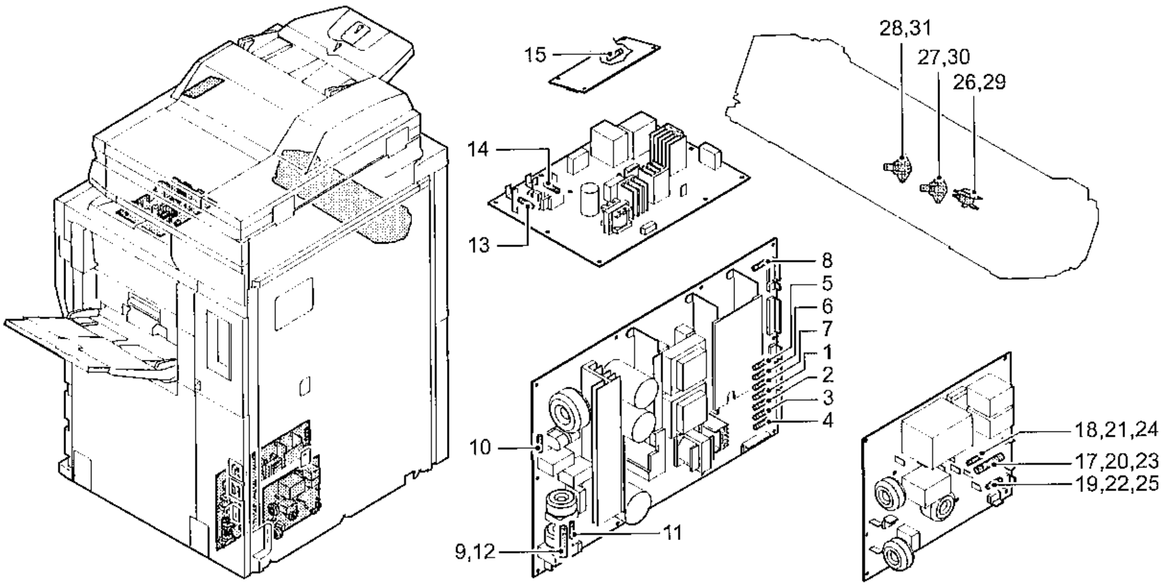
I. Fuse/thermostat



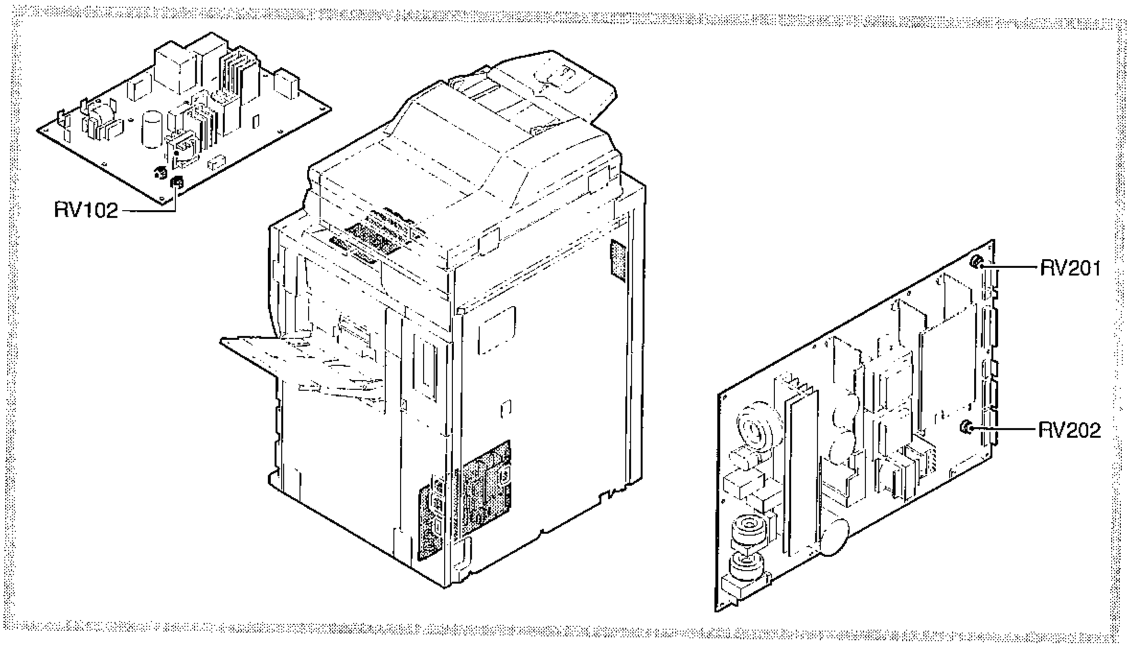
No.	Code	Name	Type	Specificaiton	Funciton/Operation	Section	NOTE
1	F201	Fuse	Time lag	250V 6.3A	PCU PWB protection (24V1)	DC main power PWB	100V system/ 200V system
2	F202	Fuse	Time lag	250V 6.3A	Driver PWB protection (24V2)	DC main power PWB	100V system/ 200V system
3	F203	Fuse	Time lag	250V 6.3A	Scanner control PWB protection (24V3)	DC main power PWB	100V system/ 200V system
4	F204	Fuse	Time lag	250V 6.3A	LCC control PWB protection (24V4)	DC main power PWB	100V system/ 200V system
5	F205	Fuse	Time lag	250V 6.3A	Finisher protection (24V5)	DC main power PWB	100V system/ 200V system
6	F206	Fuse	Time lag	250V 6.3A	Inserter protection (24V6)	DC main power PWB	100V system/ 200V system
7	F207	Fuse			NOT USED	DC main power PWB	100V system/ 200V system
8	F208	Fuse	Time lag	250V 6.3A	Motor protection (38V)	DC main power PWB	100V system/ 200V system
9	F1	Fuse	Time lag	250V 15A	DC power source overcurrent protection (Main source)	DC main power PWB	100V system
10	F2	Fuse	Time lag	250V 3.15A	Varistor overcurrent protection	DC main power PWB	100V system/ 200V system
11	F3	Fuse	Time lag	250V 5A	MFP controller PWB power source protection (12V1, 5V1)	DC main power PWB	100V system/ 200V system
12	F1	Fuse	Time lag	250V 8A	DC power source overcurrent protection (Main source)	DC main power PWB	200V system
13	F101	Fuse	Time lag	250V 2A	DC sub power source oevercurrent protection (Main source)	DC sub power PWB	100V system/ 200V system
14	F102	Fuse	Time lag	250V 2A	DC sub power source overcurrent protection (Main source)	DC sub power PWB	100V system/ 200V system
15	F1	Fuse	Immediate-decision type	250V 200mA	LCD inverter circuit overcurrent protection	LVDS/INV PWB	Common
16		Fuse					
⚠ 17	F1,F2	Fuse	Time lag	125V 20A	AC power source overcurrent protection (Main source)	AC power PWB J	Japan100V
⚠ 18	F3,F4	Fuse	Time lag	250V 2.0A	Thermal heater overcurrent protection	AC power PWB J	Japan100V
⚠ 19	F5	Fuse	Time lag	250V 2.5A	MSW detection circuit overcurrent protection	AC power PWB J	Japan100V
20	F1	Fuse	Time lag	250V 20A	AC power source overcurrent protection (Main source)	AC power PWB EX100	EX Japan 100V system
21	F3	Fuse	Time lag	250V 2.0A	Thermal heater overcurrent protection	AC power PWB EX100	EX Japan 100V system
22	F5	Fuse	Time lag	250V 2.5A	MSW detection circuit overcurrent protection	AC power PWB EX100	EX Japan 100V system

⚠: Feb. 9 2004

No.	Code	Name	Type	Specificaiton	Funciton/Operation	Section	NOTE
23	F1,F2	Fuse	Time lag	240V 10A	AC power source overcurrent protection (Main source)	AC power PWB EX200	EX Japan 200V system
24	F3,F4	Fuse	Time lag	250V 2.0A	Thermal heater overcurrent protection	AC power PWB EX200	EX Japan 200V system
25	F5	Fuse	Time lag	250V 2.5A	MSW detection circuit overcurrent protection	AC power PWB EX200	EX Japan 200V system
26	HLTS1	Thermostat		120VAC 15A 240VAC 10A	Fusing roller overheat protection	Fusing unit	Japan
27	HLTS2	Thermostat		120VAC 15A 240VAC 10A	Fusing roller overheat protection	Fusing unit	Japan
28	HLTS3	Thermostat		120VAC 15A 240VAC 10A	Sub heat roller overheat protection	Fusing unit	Japan
29	HLTS1	Thermostat		120VAC 15A 240VAC 10A	Fusing roller overheat protection	Fusing unit	EX Japan
30	HLTS2	Thermostat		120VAC 15A 240VAC 10A	Fusing roller overheat protection	Fusing unit	EX Japan
31	HLTS3	Thermostat		120VAC 15A 240VAC 10A	Sub heat roller overheat protection	Fusing unit	EX Japan

J. Adjustment volume

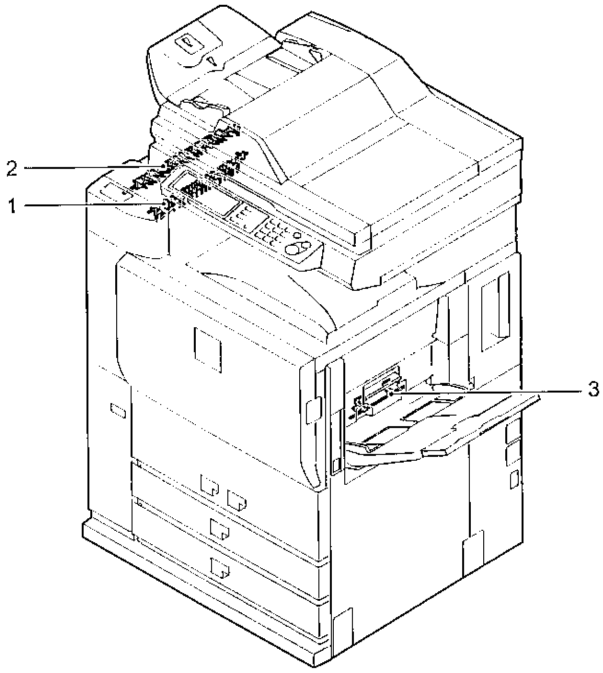
⚠



Name	Function/Operation	MODEL	NOTE
RV102	DC sub power unit +12V power output voltage adjustment VR		
RV201	DC main power unit +38V power output voltage adjustment VR		
RV202	DC main power unit +24V power output voltage adjustment VR		

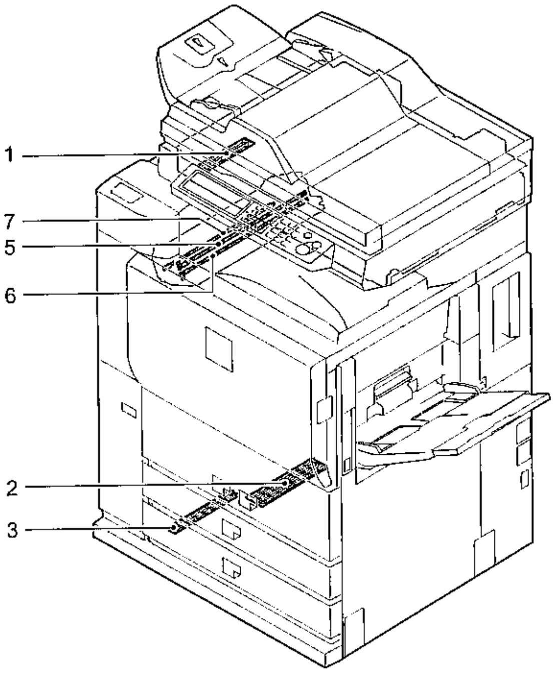
⚠

K. Gate



No.	Name	Function/Operation	MODEL	NOTE
1	Switchback gate	Selects the paper route when discharging paper to the inner tray and when switching back.		Switched not by the solenoid drive but by the automatic procedure.
2	Paper exit gate	Selects the paper route to transport paper to the duplex (ADU) section or to discharge paper.		Driven by the solenoid (DGS).
3	Manual feed gate	Specifies the lead edge position of paper when setting paper. (Prevention against double feed, and erroneous take-up of all paper into the paper feed roller)		

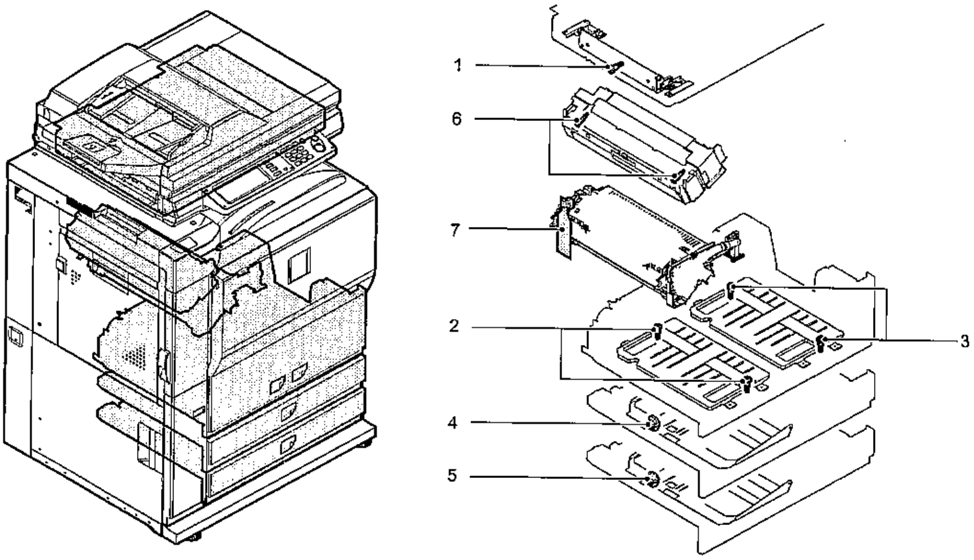
L. Heater



Code	Name	Type	Function/Operation	MODEL	NOTE
HL1	Heater lamp 1	Halogen lamp	Heats the center of the upper fusing roller.		
HL2	Heater lamp 2	Halogen lamp	Heats the both ends of the upper fusing roller.		
HL3	Sub heater lamp	Halogen lamp	Heats the fusing roller (pressing roller).		

Code	Name	Type	Function/Operation	MODEL	NOTE
WH1 DESK	Dry heater (Paper feed tray 1, 2)	Nichrome wire (18W)	Dehumidifies paper on the paper fee4d tray 1 and 2.		Standard for Japan model, option for the other destinations.
WH1 SCN	Scanner dry heater	Nichrome wire (7W)	Dehumidifies the scanner section.		Standard for Japan model, option for the other destinations.
WH2 DESK	Dry heater (Paper feed tray 3, 4)	Nichrome wire (10W)	Dehumidifies paper on the paper feed tray 3 and 4.		Standard for Japan model, option for the other destinations.

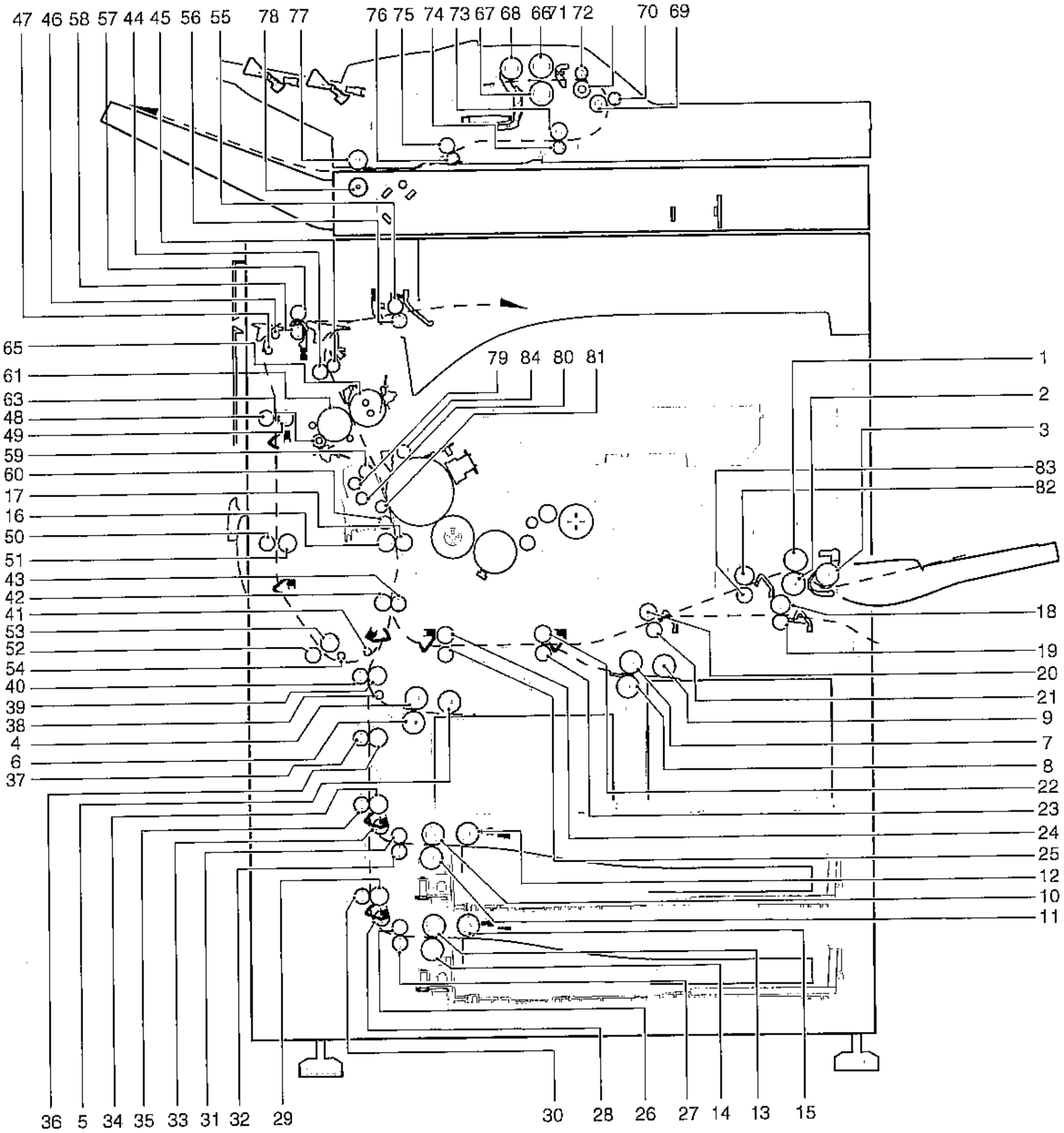
M. Lock position



No.	Name	Function/Operation	MODEL	NOTE
1	Scanner lock screw	Locks the scanner. (Protects the scanner unit from breakage during transit.)		Bu sure to lock during transit.
2	Paper tray 1 lock block	Locks the paper lift plate		
3	Paper tray 2 lock block	Locks the paper lift plate		
4	Paper tray 3 lock block	Locks the paper lift plate		
5	Paper tray 4 lock block	Locks the paper lift plate		
6	Fusing pressure release screw	Apply and release a pressure to/from the fusing roller.		Release a pressure when storing for a long time.
7	OPC drum separation pawl lock block	Protects the OPC drum from contact with the separation pawl.		

▲ : Feb. 9 2004

N. Roller



No.	Name	Function/Operation	NOTE
1	Paper feed roller (Manual paper feed tray)	Feeds paper to the paper transport section.	
2	Separation roller (Manual paper feed tray)	Separates paper to prevent against double-feed.	
3	Paper pickup roller (Manual paper feed tray)	Sends paper to the paper transport section.	
4	Paper feed roller (No. 1 paper feed tray)	Feeds paper to the paper transport section.	
5	Paper pickup roller (No. 1 paper feed roller)	Sends paper to the paper transport section.	
6	Separation roller (No. 1 paper feed tray)	Separates paper to prevent against double-feed.	
7	Paper feed roller (No. 2 paper feed tray)	Feeds paper to the paper transport section.	
8	Separation roller (No. 2 paper feed tray)	Separates paper to prevent against double-feed.	
9	Paper pickup roller (No. 2 paper feed roller)	Sends paper to the paper transport section.	
10	Paper feed roller (No. 3 paper feed tray)	Feeds paper to the paper transport section.	
11	Separation roller (No. 3 paper feed tray)	Separates paper to prevent against double-feed.	
12	Paper pickup roller (No. 3 paper feed roller)	Sends paper to the paper transport section.	
13	Paper feed roller (No. 4 paper feed tray)	Feeds paper to the paper transport section.	
14	Separation roller (No. 4 paper feed tray)	Separates paper to prevent against double-feed.	
15	Paper pickup roller (No. 4 paper feed roller)	Sends paper to the paper transport section.	
16	Resist roller (Drive)	Transports paper to the transfer section. / Controls the paper transport timing and adjusts the relative relationship between the image and paper.	
17	Resist roller (Idle)	Applies a pressure to paper and the resist roller to provide a transport power of the transport roller to paper.	

No.	Name	Function/Operation	NOTE
▲ 18	Transport roller 1 (Drive)	Transports paper fed from the large capacity tray (LCC) to the transport roller 2.	
▲ 19	Transport roller 1 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
20	Transport roller 2 (Drive)	Transports paper transported from the manual paper feed and the transport roller 1 to the transport roller 3.	
21	Transport roller 2 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
22	Transport roller 3 (Drive)	Transports paper transported from the paper teed tray 2 and the transport roller 2 to the transport roller 3.	
23	Transport roller 3 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
24	Transport roller 4 (Drive)	Transports paper transported from the transport roller 3 to the transport roller 15.	
25	Transport roller 4 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
26	Transport roller 5 (Drive)	Transports paper fed from the paper feed tray 4 to the transport rollers 6 and 7.	
27	Transport roller 5 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
28	Transport roller 6 (Idle)	Reduces friction between paper and the paper guide.	
29	Transport roller 7 (Drive)	Transports paper transported from the transport roller 5 to the transport roller 10.	
30	Transport roller 7 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
31	Transport roller 8 (Drive)	Transports paper transported from the paper feed tray 3 to the transport rollers 9 and 10.	
32	Transport roller 8 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
33	Transport roller 9 (Idle)	Reduces friction between paper and the paper guide.	
34	Transport roller 10 (Drive)	Transports paper transported from the transport rollers 7 and 8 to the transport roller 11.	
35	Transport roller 10 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
36	Transport roller 11 (Drive)	Transports paper transported from the transport roller 10 to the transport roller 13.	
37	Transport roller 11 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
38	Transport roller 12 (Idle)	Reduces friction between paper and the paper guide.	
39	Transport roller 13 (Drive)	Transports paper fed from the paper feed trays 1, 3, and 4 to toe transport roller 15.	
40	Transport roller 13 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
41	Transport roller 14 (Idle)	Reduces friction between paper and the paper guide.	
42	Transport roller 15 (Drive)	Transports paper to the transport resist roller.	
43	Transport roller 15 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
44	Transport roller 16 (Drive)	Transports paper from the fusing roller to the paper exit roller 1.	
45	Transport roller 16 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
46	Transport roller 17 (Idle)	Reduces friction between paper and the paper guide.	
47	Transport roller 18 (Idle)	Reduces friction between paper and the paper guide.	
48	Transport roller 19 (Drive)	Transports paper transported from the paper exit roller 2 to the transport roller 20.	
49	Transport roller 19 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
50	Transport roller 20 (Drive)	Transports paper transported from the transport roller 19 to the transport roller 21.	
51	Transport roller 20 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
52	Transport roller 21 (Drive)	Transports paper transported from the transport roller 20 to the transport roller 15.	
53	Transport roller 21 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
54	Transport roller 22 (Idle)	Reduces friction between paper and the paper guide.	
55	Paper exit roller 1 (Drive)	Discharges paper to the paper exit tray. / Switches back paper.	

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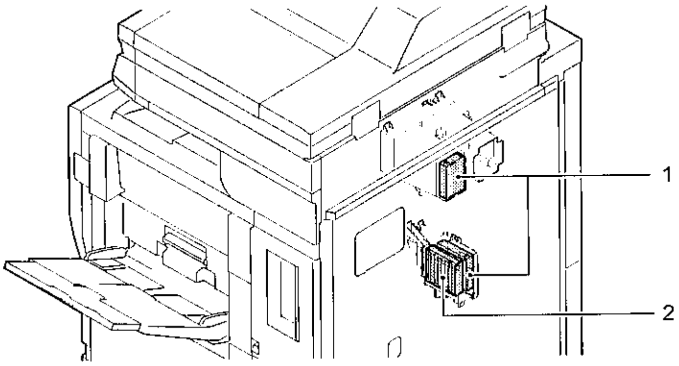
No.	Name	Function/Operation	NOTE
56	Paper exit roller 1 (Idle)	Applies a pressure to paper and the paper exit roller to provide a transport power of the paper exit roller to paper.	
57	Paper exit roller 2 (Drive)	Discharges paper. / Transports paper to the duplex (ADU) section.	
58	Paper exit roller 2 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the paper exit roller to paper.	
⚠ 59	Transfer drive roller (Drive)	Drives the transfer belt.	
60	Transfer roller (Idle)	Helps to hold the transfer belt.	
61	Fusing roller (Pressing)	Applies a pressure to the fusing roller (heating).	
⚠			
63	Sub heat roller	Heats the fusing roller (pressing).	
⚠			
65	Fusing roller (Heating)	Heat and press toner onto paper to fuse images.	
66	Paper feed roller (SPF)	Feeds paper to the paper transport section.	
67	Separation roller (SPF)	Separates paper to prevent against double feed.	
68	Paper pickup roller (SPF)	Sends paper to the paper feed roller.	
69	Transport roller 1 (Drive) (SPF)	Transports paper (which is transported by the first resist roller) to the second resist roller.	
70	Transport roller 1 (Idle) (SPF)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
71	First resist roller (Drive) (SPF)	Controls the paper transport timing. / Adjusts paper to be horizontal.	
72	First resist roller (Idle) (SPF)	Applies a pressure to paper and the resist roller to provide a transport power of the resist roller to paper.	
73	Transport roller 2 (Drive) (SPF)	Transports paper transported from the paper exit roller 1 to the transport roller 3.	
74	Transport roller 2 (Idle) (SPF)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
75	First resist roller (Drive) (SPF)	Controls the paper transport timing. / Adjusts paper to be horizontal.	
76	First resist roller (Idle) (SPF)	Applies a pressure to paper and the resist roller to provide a transport power of the resist roller to paper.	
77	Paper exit roller (Drive) (SPF)	Discharges paper.	
78	Paper exit roller (Idle) (SPF)	Applies a pressure to paper and the paper exit roller to provide a transport power of the paper exit roller to paper.	
79	Transfer cleaning roller	Cleans the transfer belt.	
80	Transfer tension roller	Applies a proper tension to the transfer belt.	
81	Transfer roller	Applies a proper voltage to the transfer belt.	
82	Transfer roller 1A (Drive)	Transports paper (which is fed from the manual paper feed tray) to the transport roller.	
83	Transfer roller 1A (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
⚠ 84	Cleaning brush roller	Removes paper dust from the photoconductor drum.	

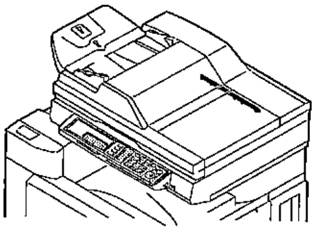
O. Filter



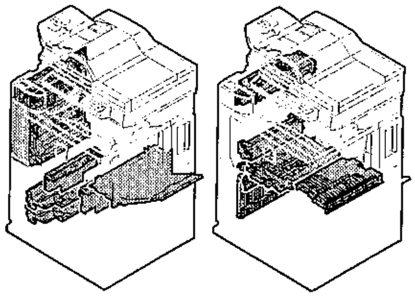
No.	Name	Function/Operation	MODEL	NOTE
1	Ozone filter	Absorbs ozone generated in the image process section.		
2	Toner filter	Filters dispersed toner in the process section.		

[6] DETAILS OF EACH SECTION

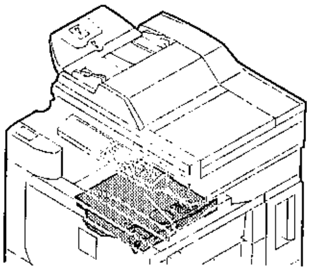
1. Operation panel section



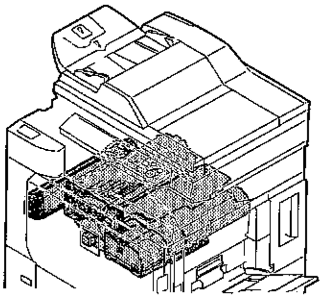
2. Paper feed, paper transport, duplex, and paper exit reverse sections



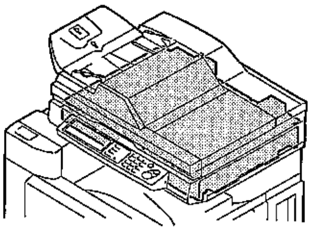
3. Laser scan unit (LSU)



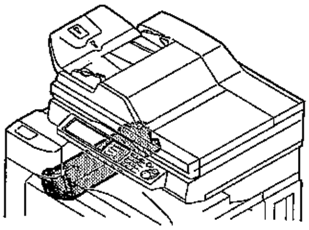
4. Image process section



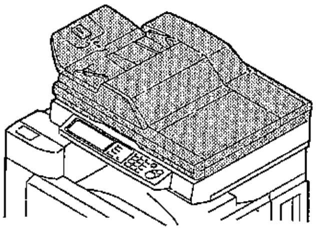
5. Scanner section



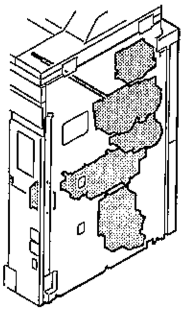
6. Fusing section



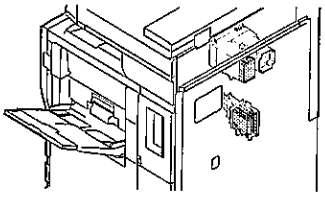
7. SPF section



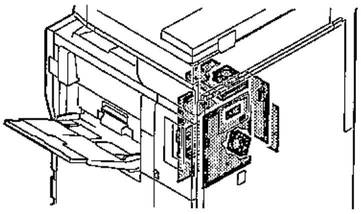
8. Drive section



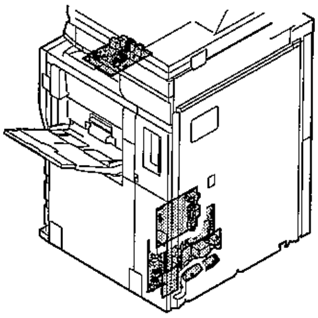
9. Filters



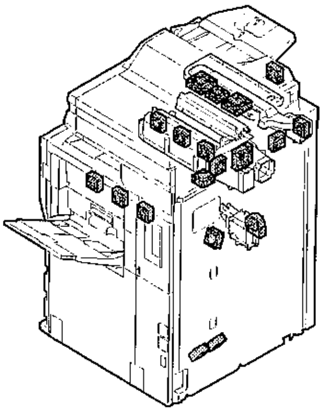
10. PWB section



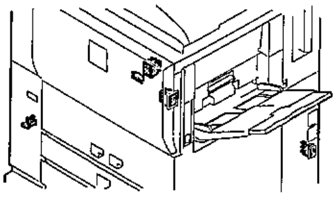
11. Power section



12. Fan motors

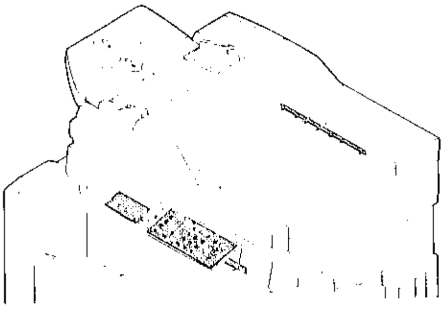


13. Sensors and switches



⚠ : Feb. 6 2004

1. Operation panel section



A. General

This section describes various types of settings, display and operation.

The LCD display section is controlled by the MFP CONTROL PWB.

The touch panel, operation keys and LED display are controlled by the SCANNER CONTROL PWB.

B. Major parts and signal functions

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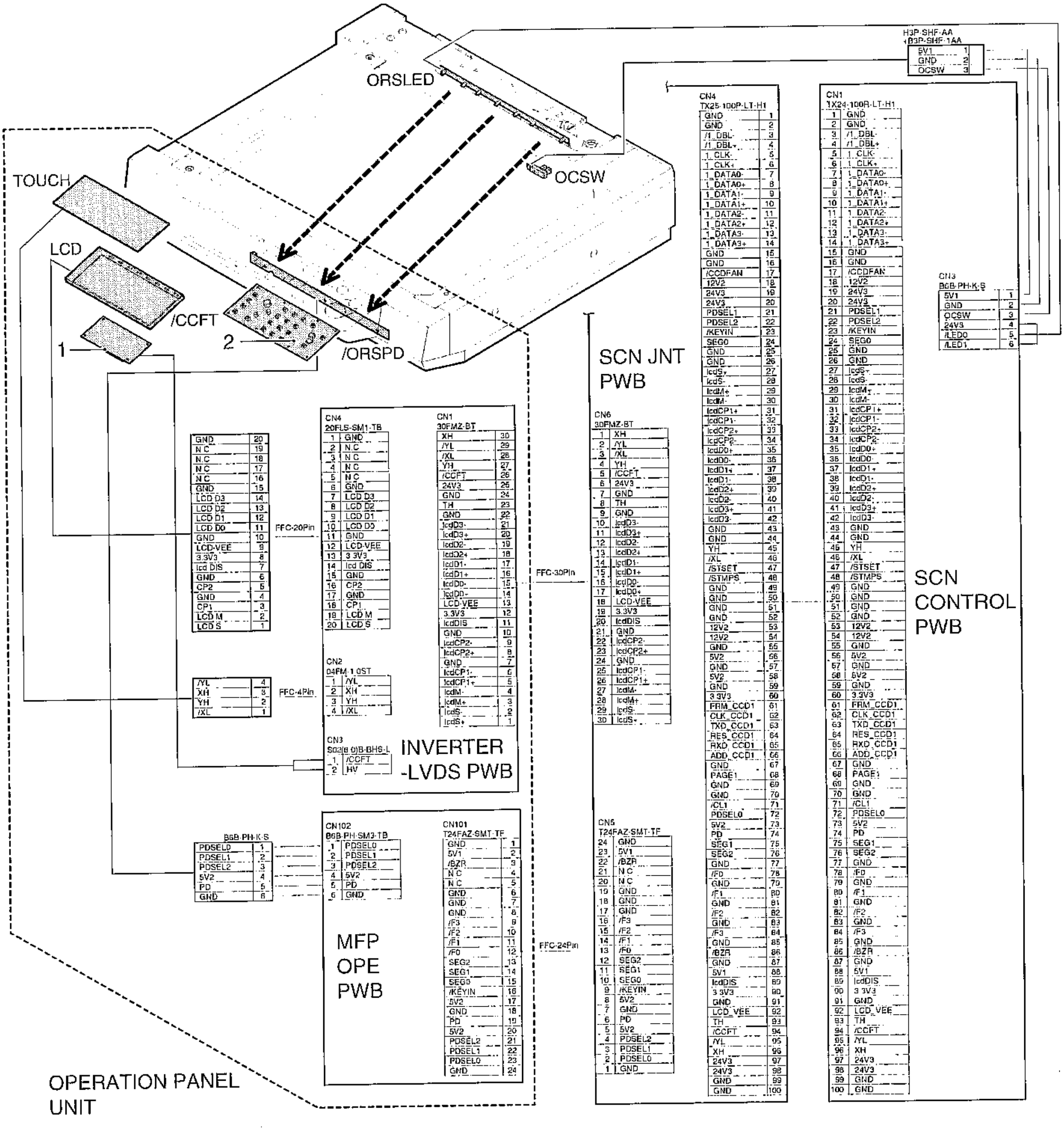

ORSLED
OCSW
TOUCH
LCD
/CCFT
1
2
/ORSPD
SCN JNT PWB
H3P-SHF-AA
(B3P-SHF-1AA
5V1 1
GND 2
OCSW 3
CN4
TX25-100P-LT-H1
GND 1
GND 2
/1_DBL- 3
/1_DBL+ 4
1_CLK- 5
1_CLK+ 6
1_DATA0- 7
1_DATA0+ 8
1_DATA1- 9
1_DATA1+ 10
1_DATA2- 11
1_DATA2+ 12
1_DATA3- 13
1_DATA3+ 14
GND 15
GND 16
/CCDFAN 17
12V2 18
24V3 19
24V3 20
PDSEL1 21
PDSEL2 22
/KEYIN 23
SEG0 24
GND 25
GND 26
lcdS+ 27
lcdS- 28
lcdM+ 29
lcdM- 30
lcdCP1+ 31
lcdCP1- 32
lcdCP2+ 33
lcdCP2- 34
lcdD0+ 35
lcdD0- 36
lcdD1+ 37
lcdD1- 38
lcdD2+ 39
lcdD2- 40
lcdD3+ 41
lcdD3- 42
GND 43
GND 44
YH 45
/XL 46
/STSET 47
/STMPS 48
GND 49
GND 50
GND 51
GND 52
12V2 53
12V2 54
GND 55
5V2 56
GND 57
5V2 58
GND 59
3.3V3 60
FRM_CCD1 61
CLK_CCD1 62
TXD_CCD1 63
RES_CCD1 64
RXD_CCD1 65
ADD_CCD1 66
GND 67
PAGE1 68
GND 69
GND 70
/CL1 71
PDSEL0 72
5V2 73
PD 74
SEG1 75
SEG2 76
GND 77
/F0 78
GND 79
/F1 80
GND 81
/F2 82
GND 83
/F3 84
GND 85
/BZR 86
GND 87
5V1 88
lcdDIS 89
3.3V3 90
GND 91
LCD_VEE 92
TH 93
/CCFT 94
/YL 95
XH 96
24V3 97
24V3 98
GND 99
GND 100
CN1
TX24-100R-LT-H1
1 GND
2 GND
3 /1_DBL-
4 /1_DBL+
5 1_CLK-
6 1_CLK+
7 1_DATA0-
8 1_DATA0+
9 1_DATA1-
10 1_DATA1+
11 1_DATA2-
12 1_DATA2+
13 1_DATA3-
14 1_DATA3+
15 GND
16 GND
17 /CCDFAN
18 12V2
19 24V3
20 24V3
21 PDSEL1
22 PDSEL2
23 /KEYIN
24 SEG0
25 GND
26 GND
27 lcdS+
28 lcdS-
29 lcdM+
30 lcdM-
31 lcdCP1+
32 lcdCP1-
33 lcdCP2+
34 lcdCP2-
35 lcdD0+
36 lcdD0-
37 lcdD1+
38 lcdD1-
39 lcdD2+
40 lcdD2-
41 lcdD3+
42 lcdD3-
43 GND
44 GND
45 YH
46 /XL
47 /STSET
48 /STMPS
49 GND
50 GND
51 GND
52 GND
53 12V2
54 12V2
55 GND
56 5V2
57 GND
58 5V2
59 GND
60 3.3V3
61 FRM_CCD1
62 CLK_CCD1
63 TXD_CCD1
64 RES_CCD1
65 RXD_CCD1
66 ADD_CCD1
67 GND
68 PAGE1
69 GND
70 GND
71 /CL1
72 PDSEL0
73 5V2
74 PD
75 SEG1
76 SEG2
77 GND
78 /F0
79 GND
80 /F1
81 GND
82 /F2
83 GND
84 /F3
85 GND
86 /BZR
87 GND
88 5V1
89 lcdDIS
90 3.3V3
91 GND
92 LCD_VEE
93 TH
94 /CCFT
95 /YL
96 XH
97 24V3
98 24V3
99 GND
100 GND
CN3
B6B-PH-K-S
5V1 1
GND 2
OCSW 3
24V3 4
/LED0 5
/LED1 6
SCN CONTROL PWB
GND 20
N.C 19
N.C 18
N.C 17
N.C 16
GND 15
LCD D3 14
LCD D2 13
LCD D1 12
LCD D0 11
GND 10
LCD-VEE 9
3.3V3 8
lcd DIS 7
GND 6
CP2 5
GND 4
CP1 3
LCD M 2
LCD S 1
FFC-20Pin
CN4
20FLS-SM1-TB
1 GND
2 N.C
3 N.C
4 N.C
5 N.C
6 GND
7 LCD D3
8 LCD D2
9 LCD D1
10 LCD D0
11 GND
12 LCD-VEE
13 3.3V3
14 lcd DIS
15 GND
16 CP2
17 GND
18 CP1
19 LCD M
20 LCD S
CN1
30FMZ-BT
XH 30
/YL 29
/XL 28
YH 27
/CCFT 26
24V3 25
GND 24
TH 23
GND 22
lcdD3- 21
lcdD3+ 20
lcdD2- 19
lcdD2+ 18
lcdD1- 17
lcdD1+ 16
lcdD0- 15
lcdD0+ 14
LCD-VEE 13
3.3V3 12
lcdDIS 11
GND 10
lcdCP2- 9
lcdCP2+ 8
GND 7
lcdCP1- 6
lcdCP1+ 5
lcdM- 4
lcdM+ 3
lcdS- 2
lcdS+ 1
FFC-30Pin
CN6
30FMZ-BT
1 XH
2 /YL
3 /XL
4 YH
5 /CCFT
6 24V3
7 GND
8 TH
9 GND
10 lcdD3-
11 lcdD3+
12 lcdD2-
13 lcdD2+
14 lcdD1-
15 lcdD1+
16 lcdD0-
17 lcdD0+
18 LCD-VEE
19 3.3V3
20 lcdDIS
21 GND
22 lcdCP2-
23 lcdCP2+
24 GND
25 lcdCP1-
26 lcdCP1+
27 lcdM-
28 lcdM+
29 lcdS-
30 lcdS+
/YL 4
XH 3
YH 2
/XL 1
FFC-4Pin
CN2
04FM-1.0ST
1 /YL
2 XH
3 YH
4 /XL
CN3
S02(8.0)B-BHS-L
1 /CCFT
2 HV
INVERTER -LVDS PWB
B6B-PH-K-S
PDSEL0 1
PDSEL1 2
PDSEL2 3
5V2 4
PD 5
GND 6
CN102
B6B-PH-SM3-TB
1 PDSEL0
2 PDSEL1
3 PDSEL2
4 5V2
5 PD
6 GND
CN101
T24FAZ-SMT-TF
GND 1
5V1 2
/BZR 3
N.C 4
N.C 5
GND 6
GND 7
GND 8
/F3 9
/F2 10
/F1 11
/F0 12
SEG2 13
SEG1 14
SEG0 15
/KEYIN 16
5V2 17
GND 18
PD 19
5V2 20
PDSEL2 21
PDSEL1 22
PDSEL0 23
GND 24
MFP OPE PWB
FFC-24Pin
CN5
T24FAZ-SMT-TF
24 GND
23 5V1
22 /BZR
21 N.C
20 N.C
19 GND
18 GND
17 GND
16 /F3
15 /F2
14 /F1
13 /F0
12 SEG2
11 SEG1
10 SEG0
9 /KEYIN
8 5V2
7 GND
6 PD
5 5V2
4 PDSEL2
3 PDSEL1
2 PDSEL0
1 GND
OPERATION PANEL UNIT

⚠: Feb. 6 2004

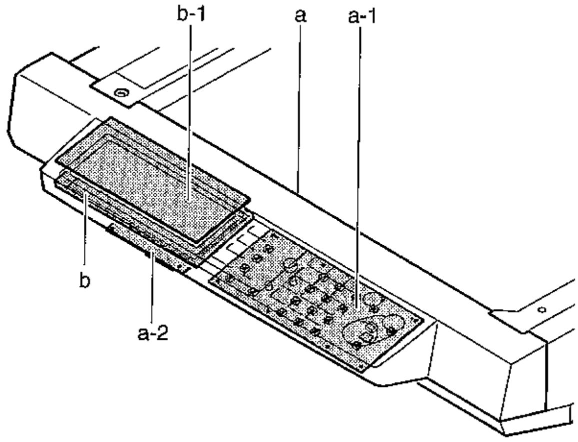
Code	Signal name	Name	Function/Operation	Type	Model	Note
LCD		LCD unit	Display the each memu and the information.			
TOUCH		Touch panel	Various adjustments and setting operation are performed.			
ORSLED		Document size detection light emitting PWB	Generates the document size detection signal.			
ORSPD		Document size detection light receiving PWB	Generates the document size detection signal.			
OCSW	OCSW	SPF open/close detector	Document size detection trigger	Transmission type		Sensor
/CCFT	/CCFT	LCD backlight	LCD backlight	CCFT cool CRT		

No.	Name	Function
1	LVDS/INV PWB	Generates the LCD display signal and a high voltage for the backlight.
2	Operation control PWB	Controls the display operation panel.

C. Maintenance and parts replacement

(List of Replacement Parts)

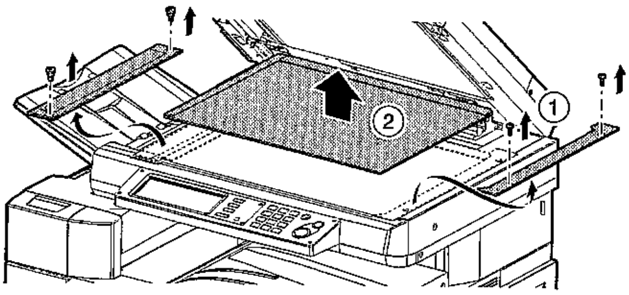
No.	Unit	Parts	
a	Operation panel unit	1	Operation control PWB
		2	LVDS/INV PWB
b	LCD unit	1	Touch panel



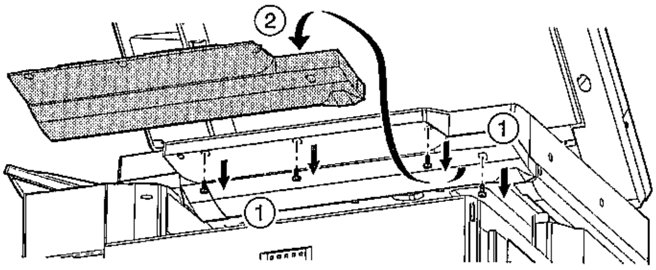
(1) Maintenance and parts replacement

a. Operation panel unit

1) Remove the table glass.

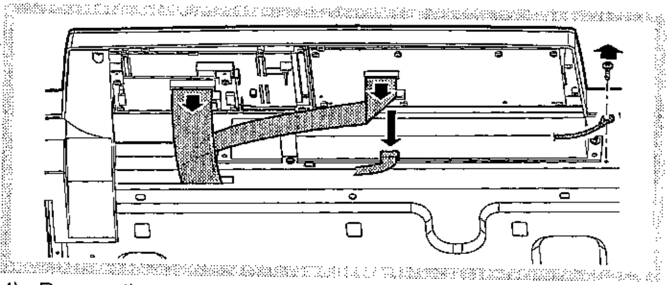


2) Remove the operation section cover.



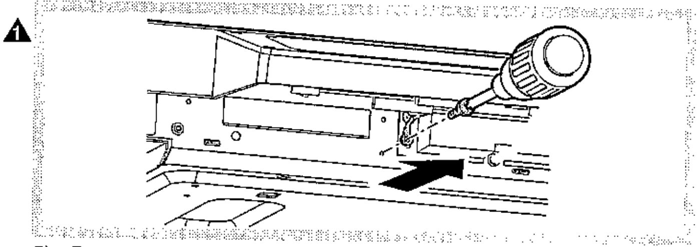
3) Remove each cable.

⚠



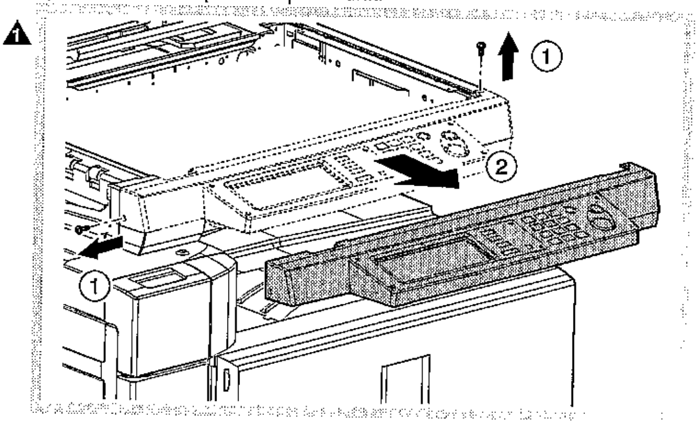
4) Remove the ground lead.

⚠



5) Remove the operation panel unit.

⚠

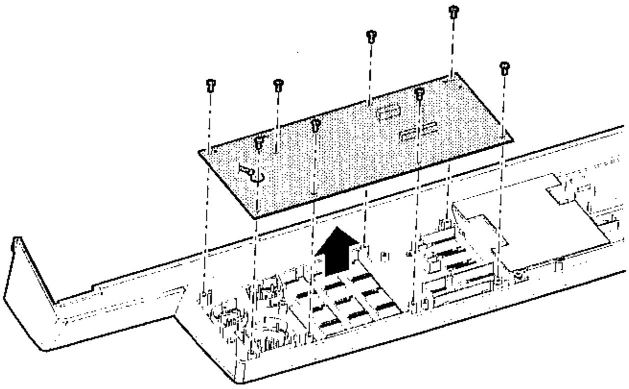


▲1 : Feb. 6 2004

a-1. Operation control PWB

1) Remove the operation panel unit. (See "a. Operation panel unit")
2) Remove the ground lead.

▲1

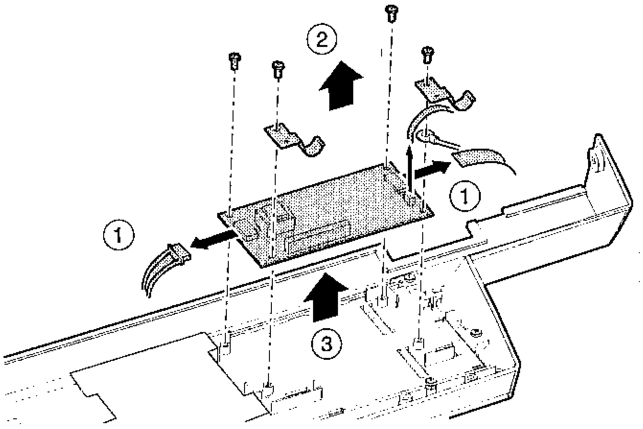


3) Remove the operation control PWB.

a-2. LVDS/INV PWB

1) Remove the operation panel unit. (See "a. Operation panel unit")
2) Remove the ground lead.

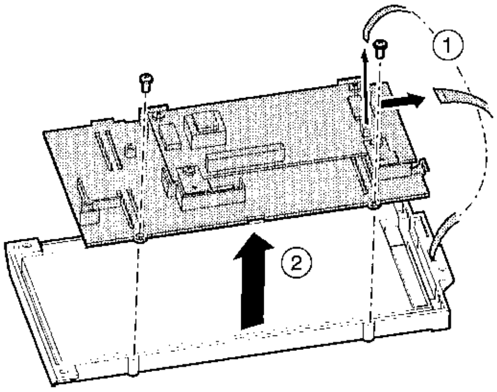
▲1



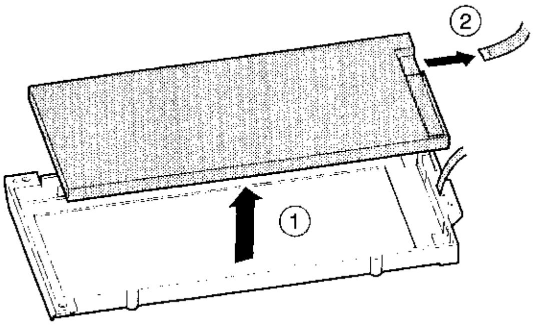
3) Remove each cable.
4) Remove the LVDS/INV PWB.

b. LCD unit

1) Remove the operation panel unit. (See "a. Operation panel unit")
2) Remove each cable.

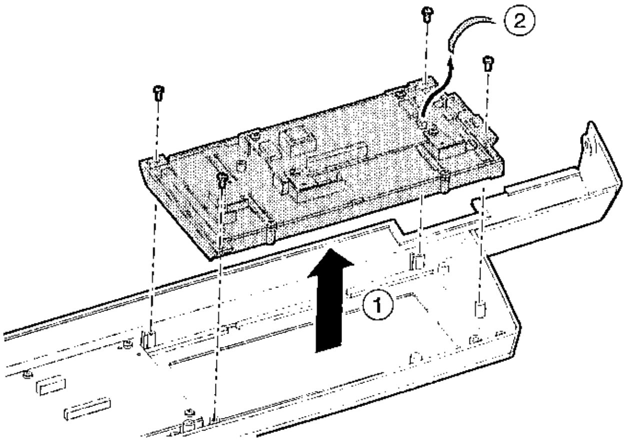


3) Remove the LCD cover.
4) Remove the LCD unit.

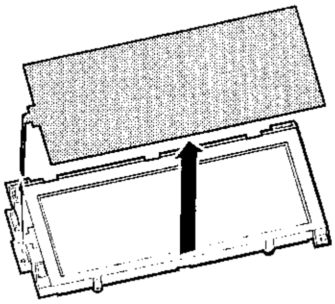


b-1. Touch panel

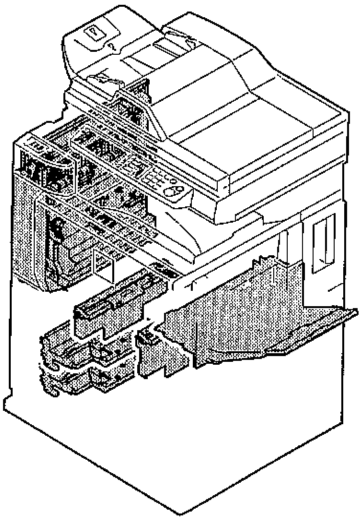
1) Remove the operation panel unit. (See "a. Operation panel unit")
2) Remove the LCD unit.

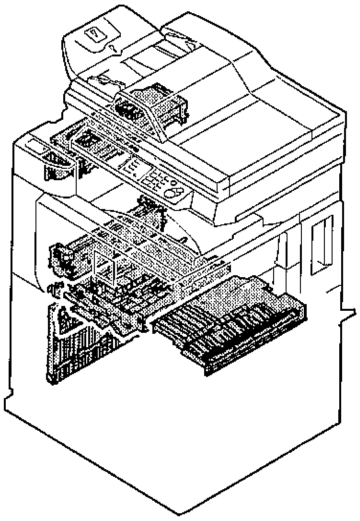


3) Remove the flat cable.
4) Remove the touch panel.



2. Paper feed, paper transport, duplex, and paper exit reverse sections





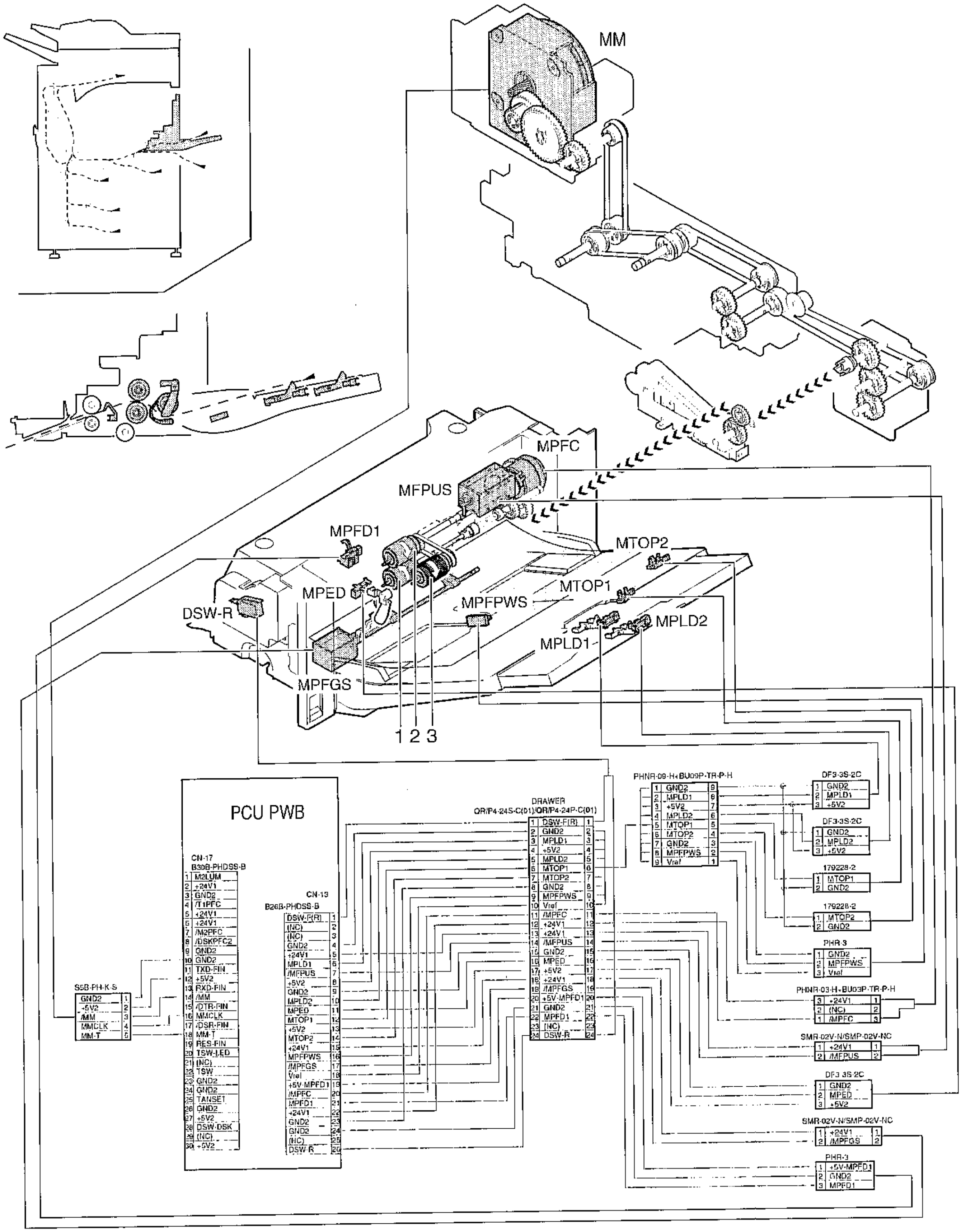
[Paper feed section]

General

The paper feed tray 1 holds 900 sheets, the paper feed tray 2 holds 1,300 sheets, the multi-purpose paper feed tray 3 holds 500 sheets, the paper feed tray 4 holds 500 sheets, and the manual paper feed tray holds 100 sheets. Those paper feed units are standard provisions.

(Manual paper feed section)

A. Major parts and signal functions


MM
MPFC
MFPUS
MPFD1
MTOP2
MTOP1
MPED
MPFPWS
DSW-R
MPLD2
MPLD1
MPFGS
1 2 3
PCU PWB
CN-17
B30B-PHDSS-B
1 M2LUM
2 +24V1
3 GND2
4 /T1PFC
5 +24V1
6 +24V1
7 /M2PFC
8 /DSKPFC2
9 GND2
10 GND2
11 TXD-FIN
12 +5V2
13 RXD-FIN
14 /MM
15 /DTR-FIN
16 MMCLK
17 /DSR-FIN
18 MM-T
19 RES-FIN
20 TSW-LED
21 (NC)
22 TSW
23 GND2
24 GND2
25 TANSET
26 GND2
27 +5V2
28 DSW-DSK
29 (NC)
30 +5V2
S5B-PH-K-S
GND2 1
+5V2 2
/MM 3
MMCLK 4
MM-T 5
CN-13
B26B-PHDSS-B
DSW-F(R) 1
(NC) 2
(NC) 3
GND2 4
+24V1 5
MPLD1 6
/MFPUS 7
+5V2 8
GND2 9
MPLD2 10
MPED 11
MTOP1 12
+5V2 13
MTOP2 14
+24V1 15
MPFPWS 16
/MPFGS 17
Vref 18
+5V-MPFD1 19
/MPFC 20
MPFD1 21
+24V1 22
GND2 23
GND2 24
(NC) 25
DSW-R 26
DRAWER
QR/P4-24S-C(01)/QR/P4-24P-C(01)
1 DSW-F(R) 1
2 GND2 2
3 MPLD1 3
4 +5V2 4
5 MPLD2 5
6 MTOP1 6
7 MTOP2 7
8 GND2 8
9 MPFPWS 9
10 Vref 10
11 /MPFC 11
12 +24V1 12
13 +24V1 13
14 /MFPUS 14
15 GND2 15
16 MPED 16
17 +5V2 17
18 +24V1 18
19 /MPFGS 19
20 +5V-MPFD1 20
21 GND2 21
22 MPFD1 22
23 (NC) 23
24 DSW-R 24
PHNR-09-H+BU09P-TR-P-H
1 GND2 9
2 MPLD1 8
3 +5V2 7
4 MPLD2 6
5 MTOP1 5
6 MTOP2 4
7 GND2 3
8 MPFPWS 2
9 Vref 1
DF3-3S-2C
1 GND2
2 MPLD1
3 +5V2
DF3-3S-2C
1 GND2
2 MPLD2
3 +5V2
179228-2
1 MTOP1
2 GND2
179228-2
1 MTOP2
2 GND2
PHR-3
1 GND2
2 MPFPWS
3 Vref
PHNR-03-H+BU03P-TR-P-H
3 +24V1 1
2 (NC) 2
1 /MPFC 3
SMR-02V-N/SMP-02V-NC
1 +24V1 1
2 /MFPUS 2
DF3-3S-2C
1 GND2
2 MPED
3 +5V2
SMR-02V-N/SMP-02V-NC
1 +24V1 1
2 /MPFGS 2
PHR-3
1 +5V-MPFD1
2 GND2
3 MPFD1

Code	Signal name	Name	Function/Operation	Type	Model	Note
MPED	MPED	Manual feed paper empty detector	Manual paper feed tray paper empty detection	Transmission type		Manual paper feed unit
MPFD1	MPFD1	Manual feed paper pass detector 1	Manual tray paper pass detection	Transmission type		Paper transport system sensor
MPFPWS	MPFPWS	Manual feed paper width detector	Manual feed paper width detection	Volume resistor		Analog detector
MPLD1	MPLD1	Manual feed paper length detector 1	Manual paper feed tray paper length detection (Paper feed side)	Transmission type		Manual paper feed unit
MPLD2	MPLD2	Manual feed paper length detector 2	Manual paper feed tray paper length detection (Outside)	Transmission type		Manual paper feed unit
MTOP1	MTOP1	Manual tray pull-out position detector 1	Manual paper feed tray pull-out position detection (Storing position)	Contact type		Manual paper feed unit
MTOP2	MTOP2	Manual tray pull-out position detector 2	Manual paper feed tray pull-out position detection (Pull-out position)	Contact type		Manual paper feed unit
DSW-R	DSW-R	Manual feed unit open/close detector	Manual paper feed unit open/close detection, main charger power/ developing bias power line open/close	Micro switch		
MPFC	MPFC	Paper feed clutch (Manual paper feed)	Manual paper feed section paper feed roller ON/OFF control	Electromagnetic clutch		
MFPUS	MFPUS	Paper pickup solenoid (Manual paper feed)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid		
MPFGS	MPFGS	Manual paper feed gate solenoid	Manual feed gate solenoid open/close control	Electromagnetic solenoid		

No.	Name	Function
1	Separation roller (Manual paper feed tray)	Separates paper to prevent against double feed.
2	Paper feed roller (Manual paper feed tray)	Feeds paper to the paper transport section.
3	Paper pickup roller (Manual paper feed tray)	Sends paper to the paper feed roller.
4	Torque limiter	A fixed level of resistance is applied to the paper separation roller to prevent against double feed.

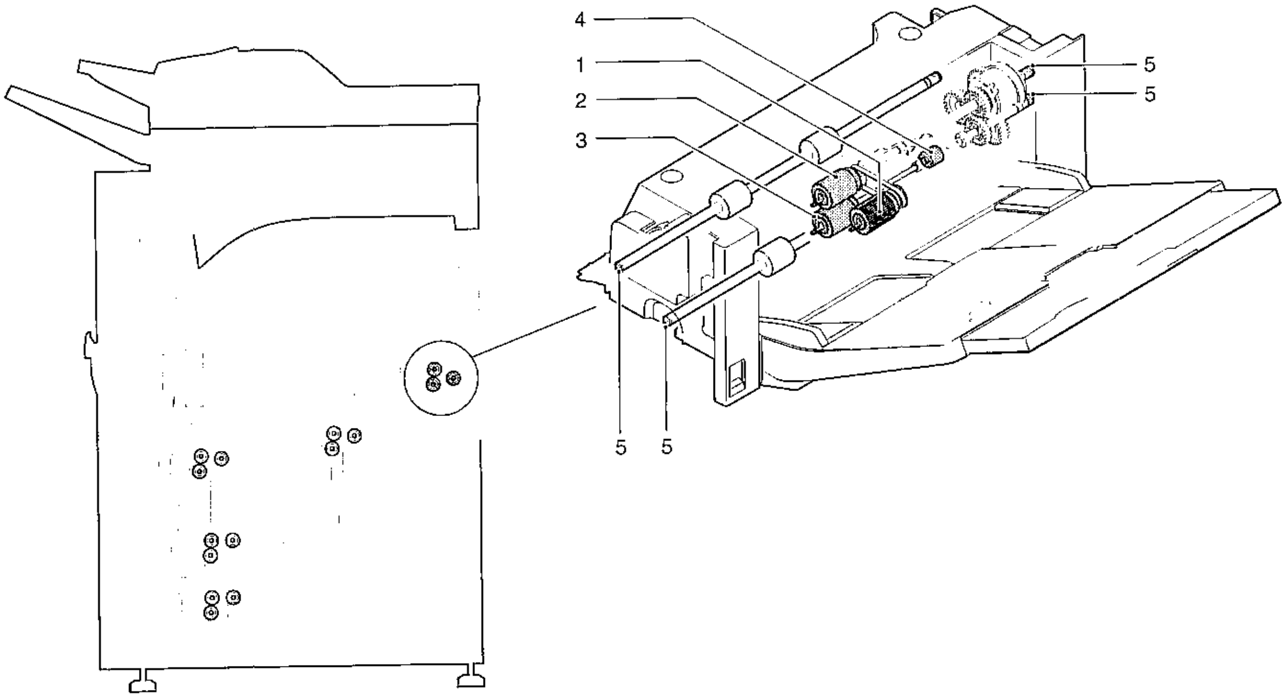
B. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ⊔: Shift position

		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N, AR-M700U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Multi manual paper feed	1	Pickup roller	×	×	×	×	×	×	×	×	×	(Note 1)
	2	Paper feed roller	×	×	×	×	×	×	×	×	×	(Note 1)
	3	Separation roller	×	×	×	×	×	×	×	×	×	(Note 1)
	4	Torque limiter	×	×	×	×	×	×	×	×	×	(Note 1)
	5	Shaft (Conduction grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0012QSZZ

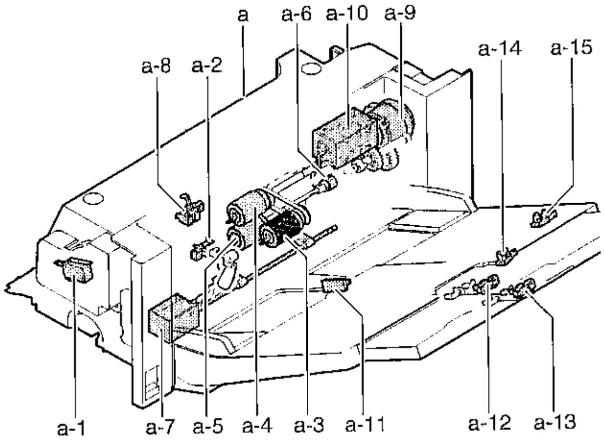
(Note 1) Replacement reference: For replacement, refer to each paper feed port counter value.
Manual paper feed: 100K or 1 year
Torque limiter : 800K (However, 400K for manual paper feed section)



(2) Maintenance and parts replacement

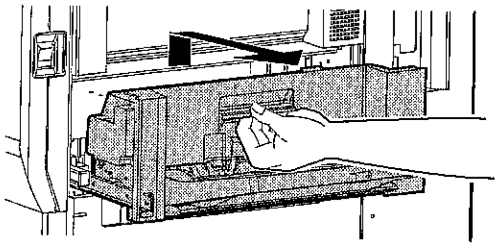
(List of Replacement Parts)

No.	Unit	Parts		
a	Multi manual paper feed tray unit	1	Manual paper feed unit open/close switch	
		2	Manual feed empty detector	
		3	Pickup roller	×
		4	Paper feed roller	×
		5	Separation roller	×
		6	Torque limiter	×
		7	Manual feed gate solenoid	
		8	Manual feed paper pass detector 1	
		9	Paper feed clutch	
		10	Paper pickup solenoid	
		11	Manual feed paper width size detection PWB	
		12	Manual feed paper length detector 1	
		13	Manual feed paper length detector 2	
		14	Manual tray pull-out position detector 1	
		15	Manual tray pull-out position detector 2	

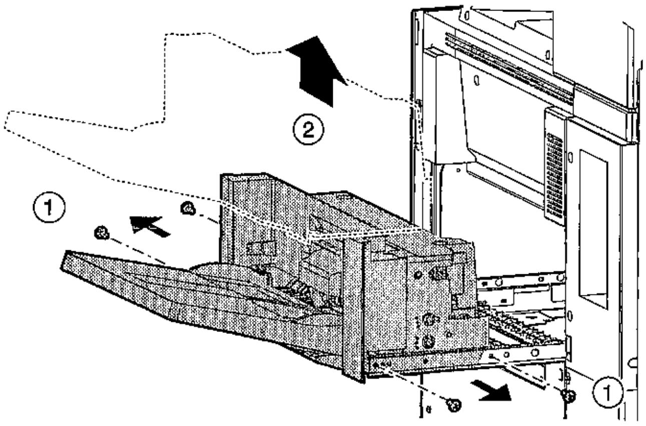


a. Multi manual paper feed tray unit

1) Pull out the multi manual paper feed tray unit.



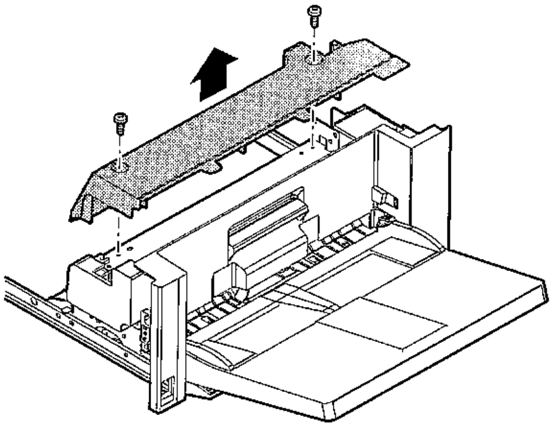
2) Remove the multi manual paper feed tray unit from the right and left accurides.



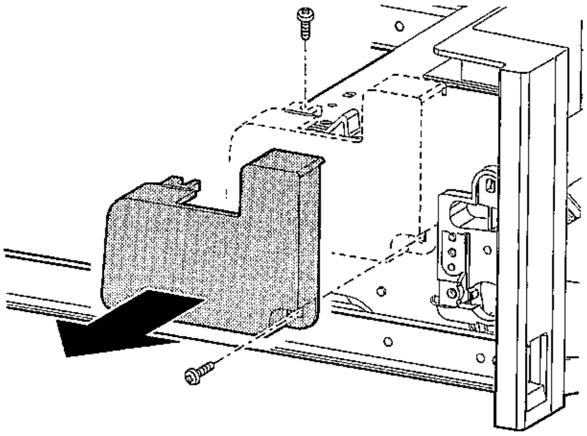
a-1. Manual paper feed unit open/close switch

1) Pull out the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")

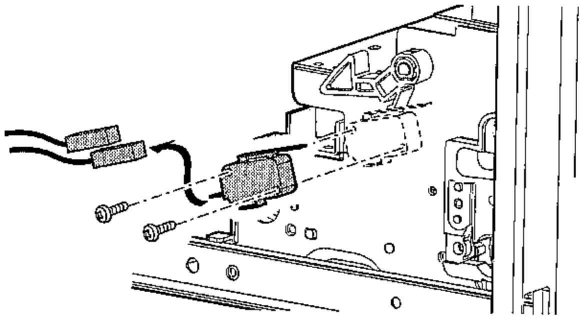
2) Remove the manual feed upper cover.



3) Remove the manual feed front cover.



4) Remove the manual paper feed unit open/close switch.

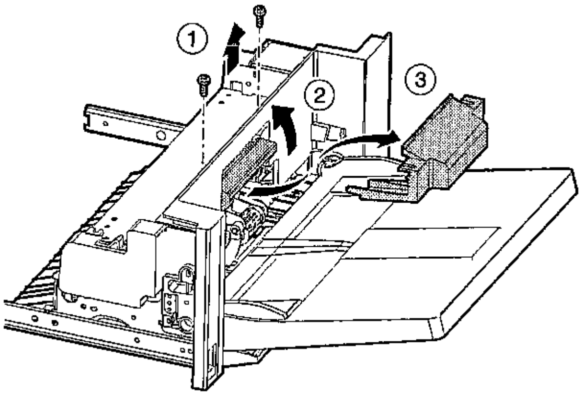


a-2. Manual feed empty detector

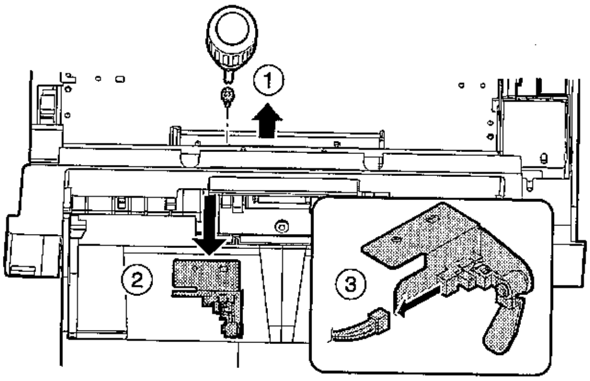
1) Pull out the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")

2) Remove the manual feed upper cover. (See "a-1. Manual paper feed unit open/close switch")

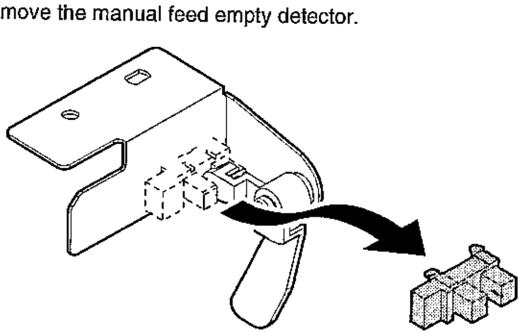
3) Remove the pickup cover.



4) Remove the actuator unit.



5) Remove the manual feed empty detector.

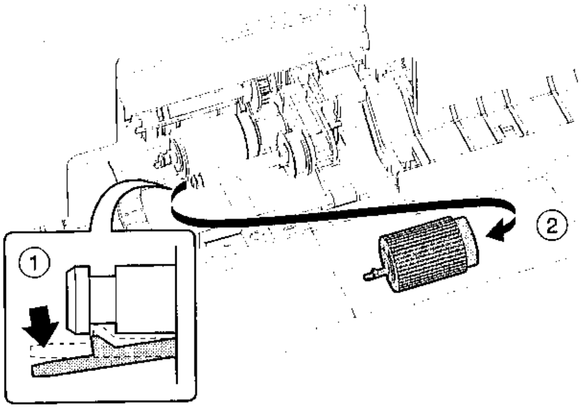


a-3. Pickup roller

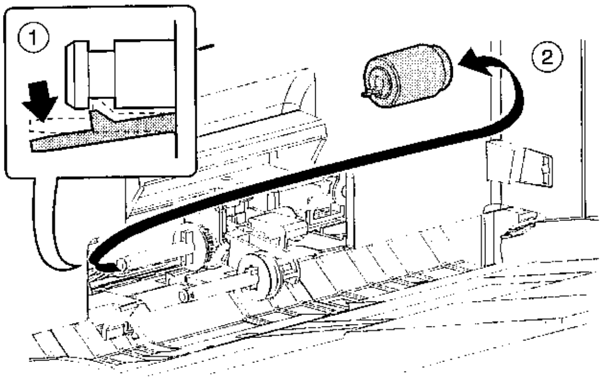
a-4. Paper feed roller

a-5. Separation roller

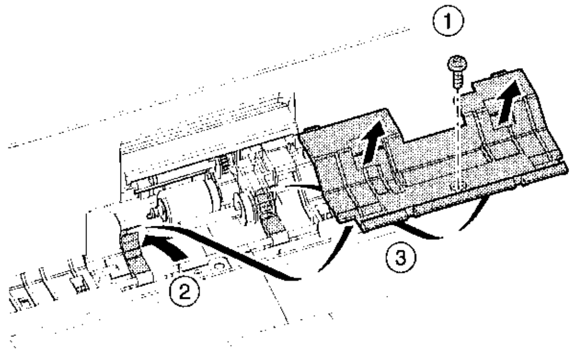
1) Pull out the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
2) Remove the actuator unit. (See "a-3. Pickup roller")
3) Unhook the claw to remove the pickup roller.



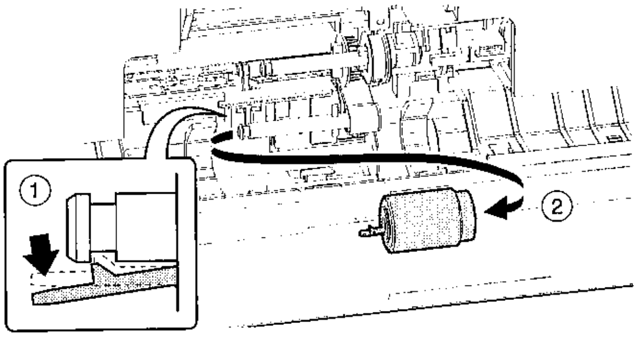
4) Unhook the claw to remove the paper feed roller.



5) Remove the separation roller cover.

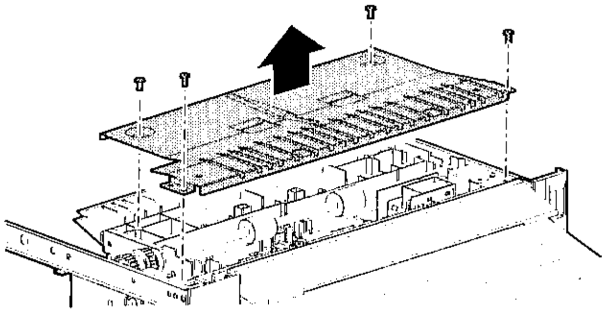


6) Remove the separation roller.

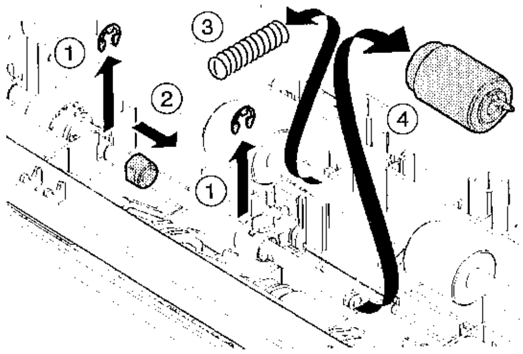


a-6. Torque limiter

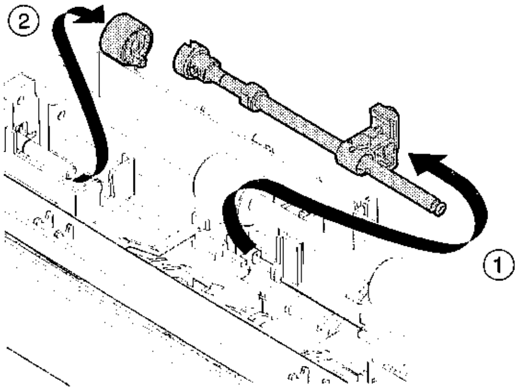
1) Pull out the multi paper feed tray unit. (See "a. Multi manual paper feed tray unit")
2) Remove the bottom cover.



3) Remove the separation roller.

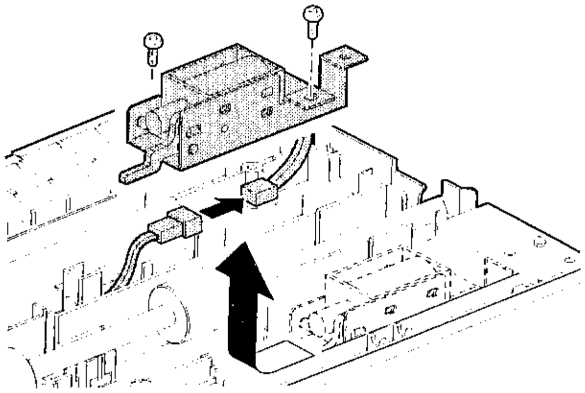


4) Remove the separation roller shaft, and remove the torque limiter.

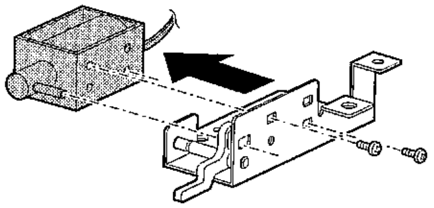


a-7. Manual feed gate solenoid

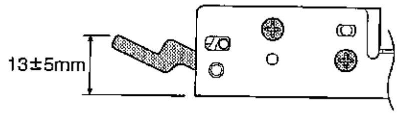
1) Remove the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
2) Remove the bottom cover. (See "a-6. Torque limiter")
3) Disconnect the connector, and remove the manual paper feed gate solenoid unit.



4) Remove the manual feed gate solenoid.

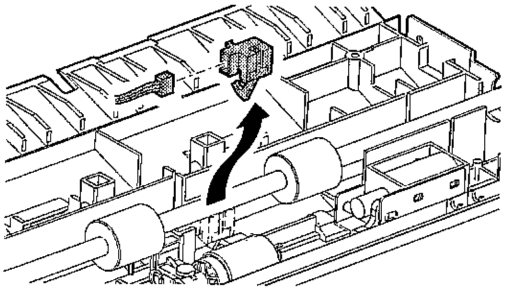


⚠ * When assembling, tighten the screw so that the lever tip is at 13±0.5mm from the frame edge with the solenoid plunger pulled.



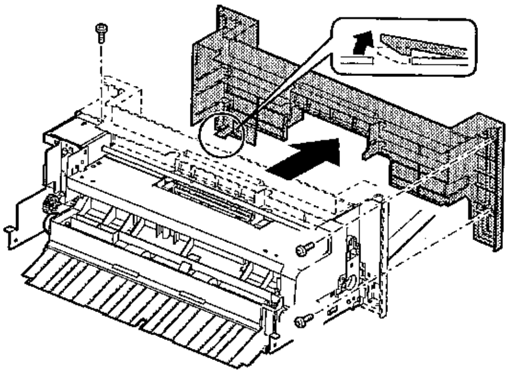
a-8. Manual feed paper pass detector 1

1) Remove the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
2) Remove the bottom cover. (See "a-6. Torque limiter")
3) Disconnect the connector, and remove the manual paper feed paper pass detector 1.

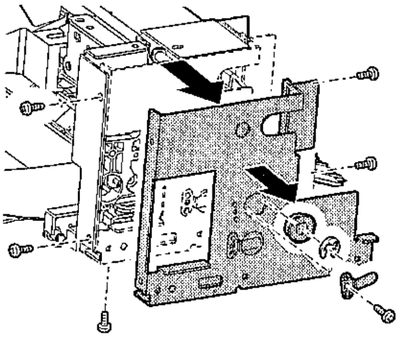


a-9. Paper feed clutch

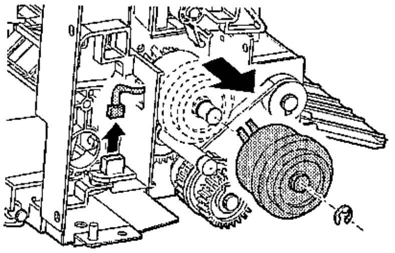
1) Remove the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
2) Remove the upper cover. (See "a-3. Pickup roller")
3) Remove the front cover.

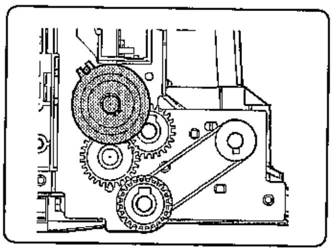


4) Remove the interface pass earth plate, the E-ring, and the bearing, and remove the manual paper feed mounting plate.



5) Remove the connector and the E-ring, and remove the paper feed clutch.

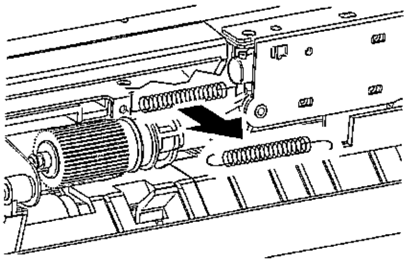




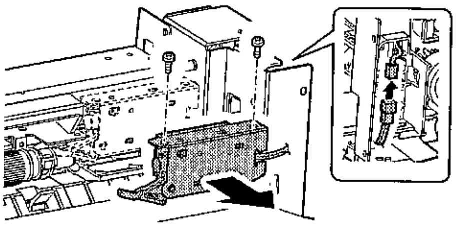
* When assembling, fit the rotation stopper of the paper feed clutch with the clutch fixing screw.

a-10. Paper pickup solenoid

1) Remove the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
2) Remove the manual paper feed upper cover and the pickup upper cover. (See "a-3. Pickup roller")
3) Remove the front cover, and remove the manual paper feed mounting plate. (See "a-9. Paper feed clutch")
4) Remove the spring.

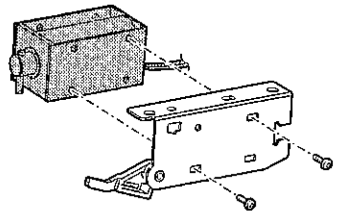


5) Disconnect the connector, and remove the paper pickup solenoid unit.



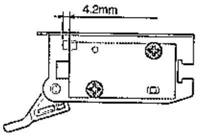
6) Remove the paper pickup solenoid.

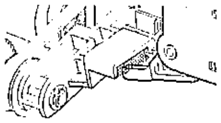
⚠



(Note for assembly)

Check that there is a clearance when the solenoid plunger is pulled.

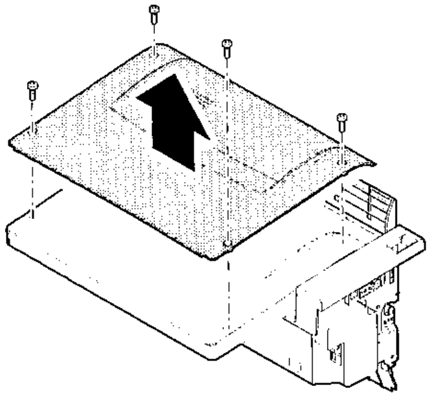




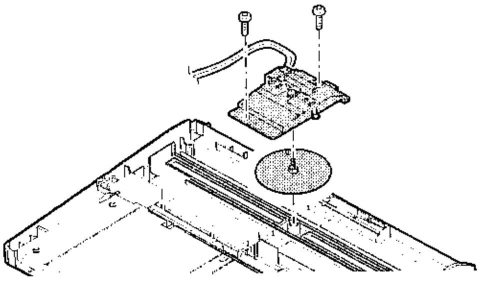
⚠ : Feb. 6 2004

a-11. Manual feed paper width size detection PWB

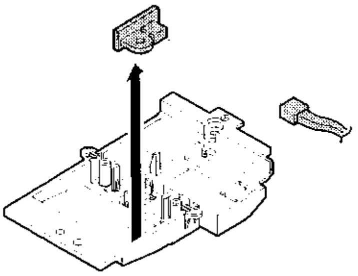
1) Remove the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
2) Remove the multi tray 250 lower.



3) Remove the width detection mounting plate.



4) Remove the pawl and the connector, and remove the manual paper feed VR PWB.



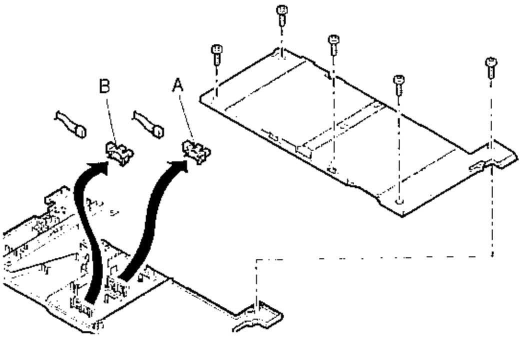
a-12. Manual feed paper length detector 1

a-13. Manual feed paper length detector 2

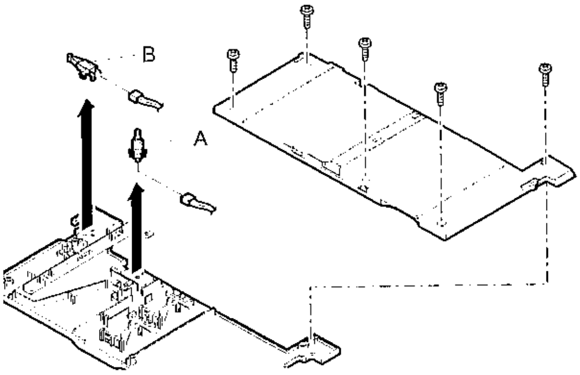
a-14. Manual tray pull-out position detector 1

a-15. Manual tray pull-out position detector 2

1) Remove the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
2) Remove the multi tray 250 lower. (See "a-11. Manual feed paper width size detection PWB")
3) Remove the manual paper feed tray lower.
4) Disconnect the connector, and remove the manual paper feed length detector 1 (A) and the manual paper feed length detector 2 (B).

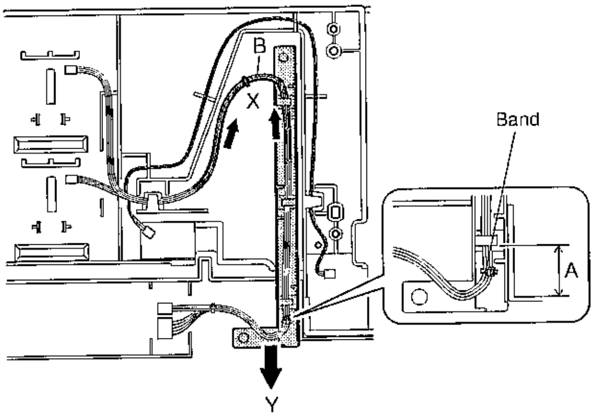


5) Disconnect the connector, and remove the manual paper feed tray pull-out position detector 1(A) and the manual paper feed tray pull-out position detector 2 (B).

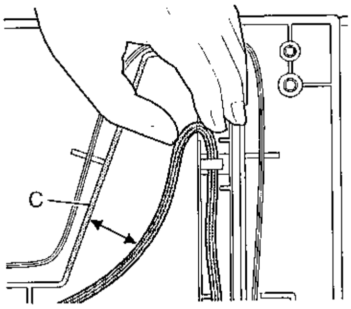


⚠ [Others]

1) Slide the harness holder in the direction of Y and install it. The band must be in the range of A. Pull section B in the arrow direction to give a slack to the harness.

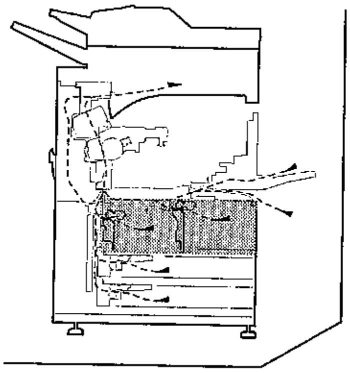


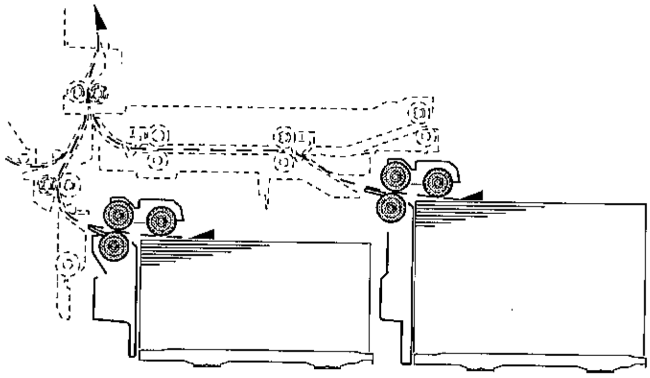
2) Fold the harness with your fingers and check that the harness keeps the folded shape along the holder when it is released. Rib C must be separated from the harness.

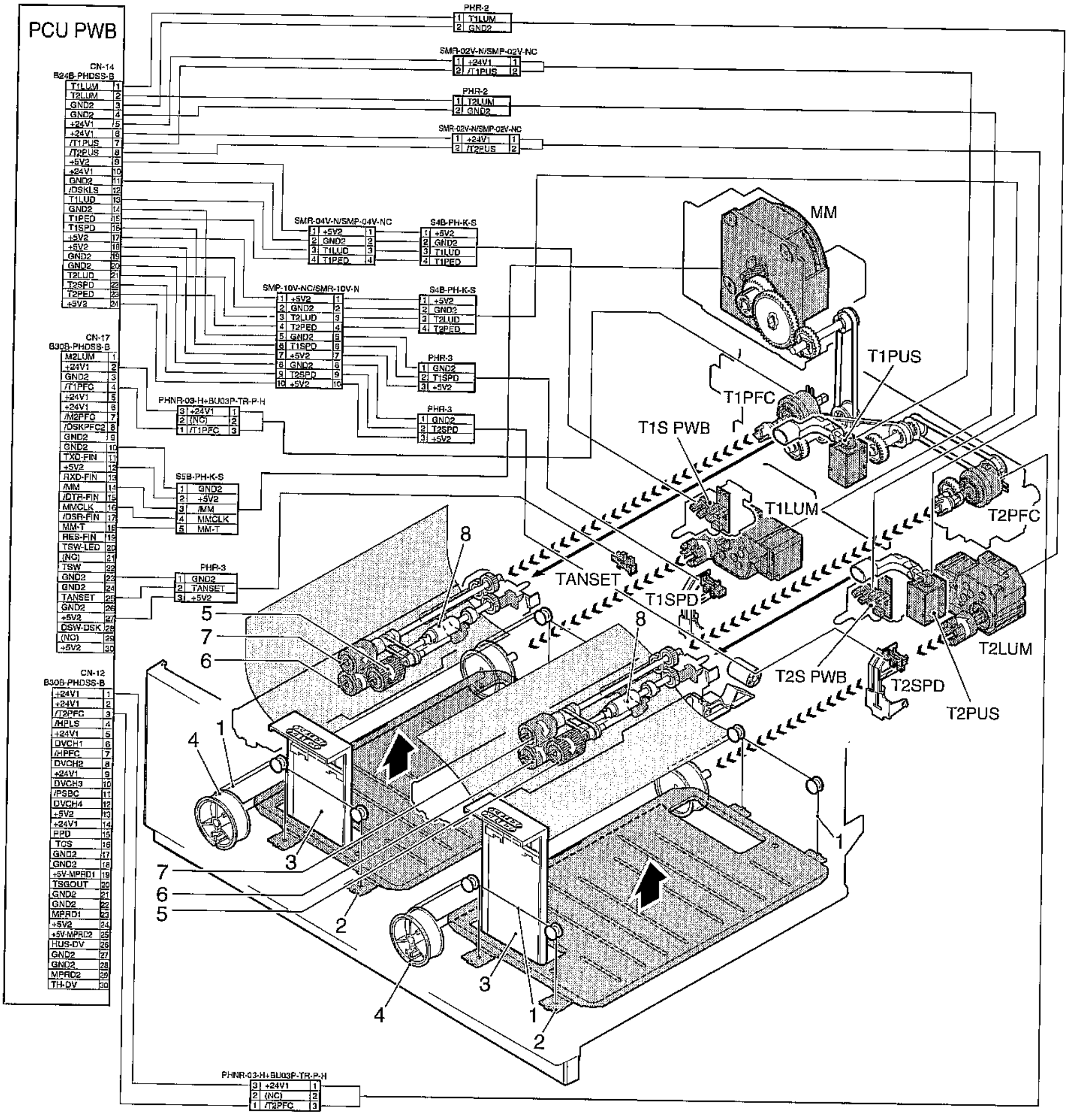


(Paper feed tray sections 1 and 2)

A. Major parts and signal functions






PCU PWB
CN-14
B24B-PHDSS-B
T1LUM 1
T2LUM 2
GND2 3
GND2 4
+24V1 5
+24V1 6
/T1PUS 7
/T2PUS 8
+5V2 9
+24V1 10
GND2 11
/DSKLS 12
T1LUD 13
GND2 14
T1PED 15
T1SPD 16
+5V2 17
+5V2 18
GND2 19
GND2 20
T2LUD 21
T2SPD 22
T2PED 23
+5V2 24
CN-17
B30B-PHDSS-B
M2LUM 1
+24V1 2
GND2 3
/T1PFC 4
+24V1 5
+24V1 6
/M2PFC 7
/DSKPFC2 8
GND2 9
GND2 10
TXD-FIN 11
+5V2 12
RXD-FIN 13
/MM 14
/DTR-FIN 15
MMCLK 16
/DSR-FIN 17
MM-T 18
RES-FIN 19
TSW-LED 20
(NC) 21
TSW 22
GND2 23
GND2 24
TANSET 25
GND2 26
+5V2 27
DSW-DSK 28
(NC) 29
+5V2 30
CN-12
B30B-PHDSS-B
+24V1 1
+24V1 2
/T2PFC 3
/HPLS 4
+24V1 5
DVCH1 6
/HPFC 7
DVCH2 8
+24V1 9
DVCH3 10
/PSBC 11
DVCH4 12
+5V2 13
+24V1 14
PPD 15
TCS 16
GND2 17
GND2 18
+5V-MPRD1 19
TSGOUT 20
GND2 21
GND2 22
MPRD1 23
+5V2 24
+5V-MPRD2 25
HUS-DV 26
GND2 27
GND2 28
MPRD2 29
TH-DV 30
PHR-2
1 T1LUM
2 GND2
SMR-02V-N/SMP-02V-NC
1 +24V1 1
2 /T1PUS 2
PHR-2
1 T2LUM
2 GND2
SMR-02V-N/SMP-02V-NC
1 +24V1 1
2 /T2PUS 2
SMR-04V-N/SMP-04V-NC
1 +5V2 1
2 GND2 2
3 T1LUD 3
4 T1PED 4
S4B-PH-K-S
1 +5V2
2 GND2
3 T1LUD
4 T1PED
SMP-10V-NC/SMR-10V-N
1 +5V2 1
2 GND2 2
3 T2LUD 3
4 T2PED 4
5 GND2 5
6 T1SPD 6
7 +5V2 7
8 GND2 8
9 T2SPD 9
10 +5V2 10
S4B-PH-K-S
1 +5V2
2 GND2
3 T2LUD
4 T2PED
PHR-3
1 GND2
2 T1SPD
3 +5V2
PHR-3
1 GND2
2 T2SPD
3 +5V2
PHNR-03-H+BU03P-TR-P-H
3 +24V1 1
2 (NC) 2
1 /T1PFC 3
S5B-PH-K-S
1 GND2
2 +5V2
3 /MM
4 MMCLK
5 MM-T
PHR-3
1 GND2
2 TANSET
3 +5V2
PHNR-03-H+BU03P-TR-P-H
3 +24V1 1
2 (NC) 2
1 /T2PFC 3
MM
T1PUS
T1PFC
T1S PWB
T1LUM
T2PFC
TANSET
T1SPD
T2S PWB
T2SPD
T2LUM
T2PUS
8
5
7
6
1
4
3
2

Code	Signal name	Name	Function/Operation	Type	Model	Note
T1SPD	T1SPD	Paper remaining quantity detector (Paper feed tray 1)	Paper remaining quantity detection (Paper feed tray 1)	Transmission type		Paper feed tray remaining quantity sensor
T2SPD	T2SPD	Paper remaining quantity detector (Paper feed tray 2)	Paper remaining quantity detection (Paper feed tray 2)	Transmission type		Paper feed tray remaining quantity sensor
TANSET	TANSET	Paper feed tray 1/2 (Tandem tray) detection signal	Paper feed tray 1, 2 (Tandem tray) insertion detection	Transmission type		Paper feed tray system sensor
T1PFC	T1PFC	Paper feed clutch (Paper feed tray 1)	Paper freed tray 1 section roller ON/OFF control	Electromagnetic clutch		
T2PFC	T2PFC	Paper feed clutch (Paper feed tray 2)	Paper freed tray 2 section roller ON/OFF control	Electromagnetic clutch		
T1LUM	T1LUM	Paper feed tray lift-up motor (Paper feed tray 1)	Drives the lift plate of the paper feed tray.	DC brush motor		Selection of Rotation mode/ Brake mode
T2LUM	T2LUM	Paper feed tray lift-up motor (Paper feed tray 2)	Drives the lift plate of the paper feed tray.	DC brush motor		Selection of Rotation mode/ Brake mode
T1PUS	T1PUS	Paper pickup solenoid (Paper feed tray 1)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid		
T2PUS	T2PUS	Paper pickup solenoid (Paper feed tray 2)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid		
MM	MM	Main motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.	DC brushless motor		Paper pass
T1S PWB	T1S PWB	Defector PWB (Paper feed tray 1)	Paper tray upper limit detection and paper empty detection (Paper feed tray 1)			
T2S PWB	T2S PWB	Defector PWB (Paper feed tray 2)	Paper tray upper limit detection and paper empty detection (Paper feed tray 2)			

No.	Name	Function
1	Lift wire	Transmits drive power of the paper feed tray lift motor to the paper feed tray.
2	Paper feed table	Paper is put on this table.
3	Paper feed tray unit 1, 2 regulation plates L/R	Regulates the paper width to restrict skew to the minimum.
4	Pulley	Transmits drive power of the paper feed tray lift motor to the paper feed tray.
5	Paper pickup roller	Sends paper to the paper feed roller.
6	Separation roller	Separates paper to prevent against double feed.
7	Paper feed roller	Feeds paper to the paper transport section.
8	Torque limiter	

B. Operational descriptions

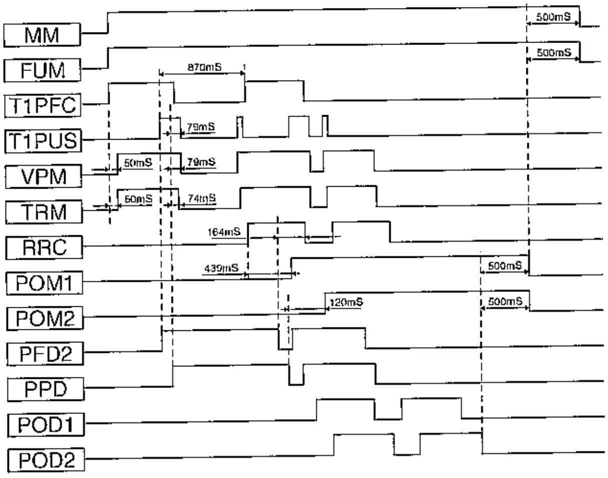
(1) Paper feed operation

a. Preliminary operation before paper feed

1) Set paper in the tray, and insert the tray into the machine. The tray sensor turns on.
2) The lift-up motor operates to lift the tray.
3) The paper upper limit sensor turns on to stop the tray at the specified position.

b. Paper feed operation

1) When copy/print operation is started, the motors (MM, FUM, VPM, and TRM) and the clutch (TRC) are turned on to turn on the solenoid (T1PUS) at the timing of paper pickup. This rotates and falls the take-up roller to pick up paper.
2) At the same time, the paper feed roller rotates to feed paper to the transport section. At that time, the separation roller rotates to prevent against double feed of paper.



(2) Each paper feed tray paper size detection method

a. Paper feed tray 1, 2

The paper feed tray 1 is used exclusively for A4 (11 x 8.5) paper size.

The paper feed tray 2 is used for A4, 11 x 8.5, or B5 paper size.

To change the paper size, change the paper guide and change the set value of SIM 26-2.

▲: Feb. 6 2004

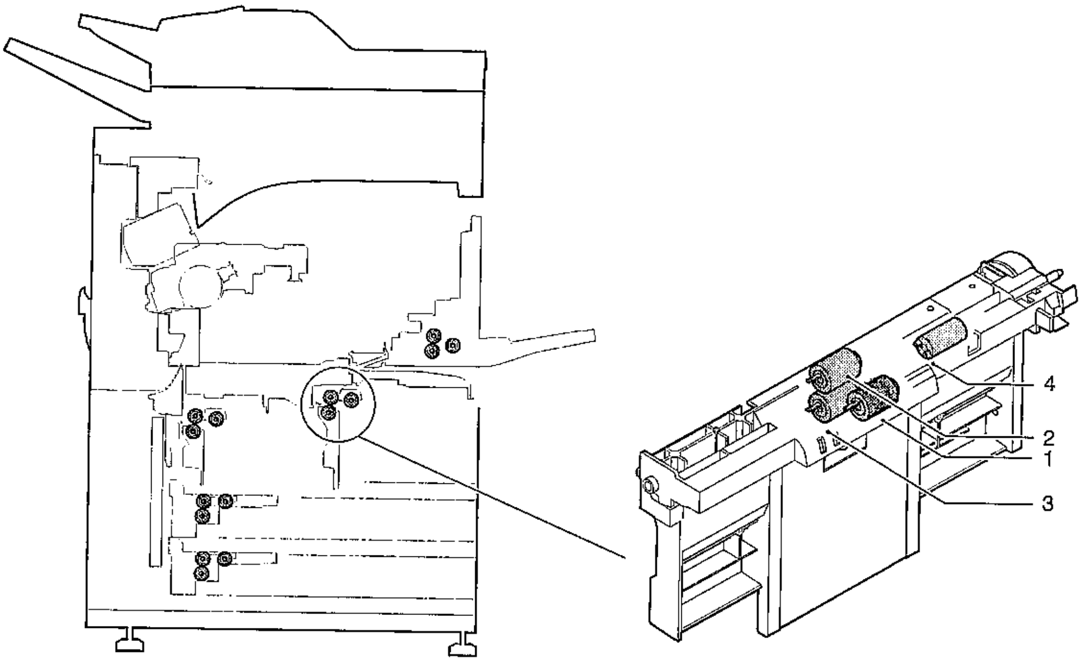
C. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❑: Shift position

		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N, AR-M700U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
▲ Paper feed tray units 1 and 2	1	Paper pickup roller	×	×	×	×	×	×	×	×	×	(Note 1)
	2	Paper feed roller	×	×	×	×	×	×	×	×	×	(Note 1)
	3	Separation roller	×	×	×	×	×	×	×	×	×	(Note 1)
	4	Torque limiter	×	×	×	×	×	×	×	×	×	(Note 1)

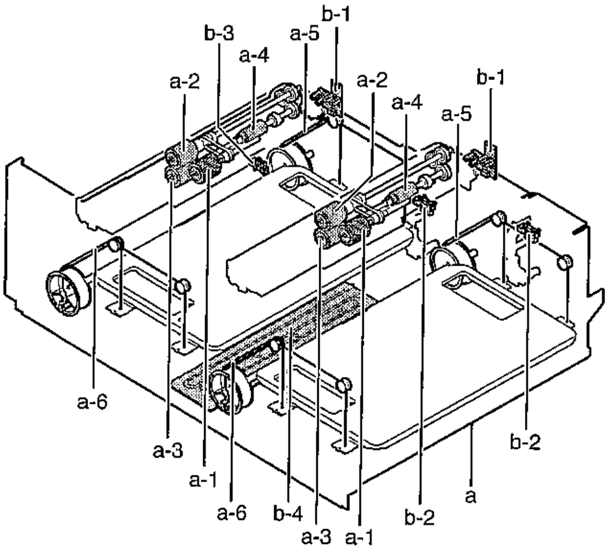
(Note 1) Replacement reference: For replacement, refer to each paper feed port counter value.
Paper feed tray units 1, 2 LCC section: 200K or 1 year
Torque limiter : 800K (However, 400K for manual paper feed section)



(2) Maintenance and parts replacement

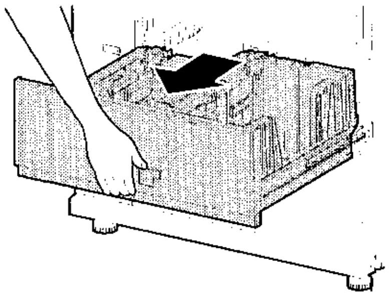
(List of Replacement Parts)

No.	Unit	Parts		
a	▲ Paper feed tray units 1 and 2	1	Pickup roller	×
		2	Paper feed roller	×
		3	Separation roller	×
		4	Torque limiter	×
		5	Lift wire (Rear)	
		6	Lift wire (Front)	
b	Others	1	Paper remaining quantity sensor PWB	
		2	Paper remaining quantity detector	
		3	Paper feed trays 1 and 2 sensor	
		4	Dry heater	

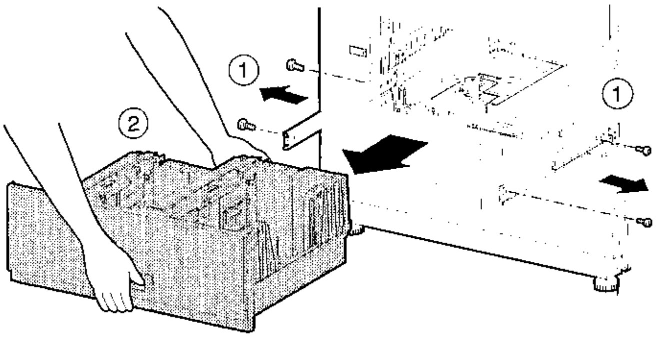


a. Paper feed tray units 1 and 2

1) Pull out the paper feed tray units 1 and 2.



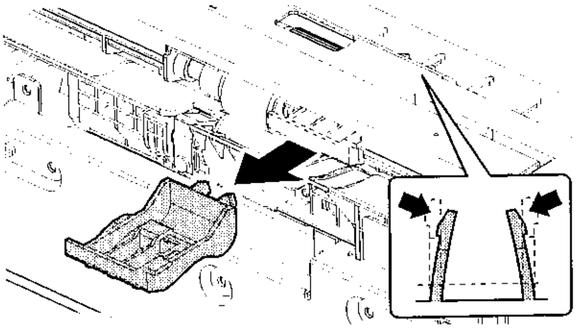
2) Remove the fixing screws from the right and left rails.



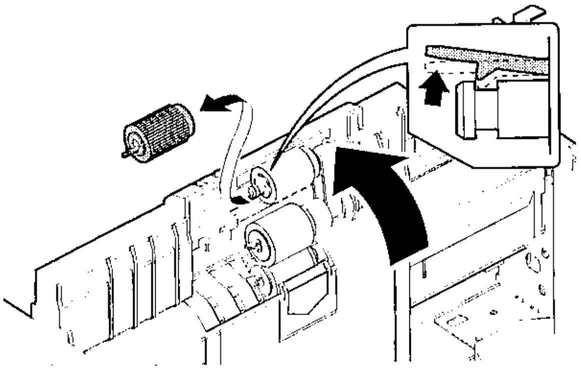
3) Remove while holding the points shown in the diagram with two hands.

a-1. Pickup roller

1) Pull out the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2")
2) Unhook the claws to remove the paper guide.

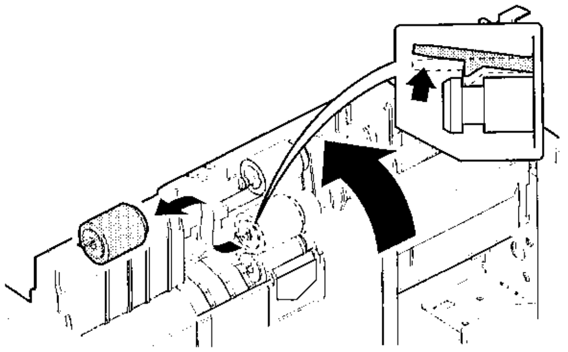


3) Unhook the claw to lift up the first paper feed tray feed section, and then remove the pickup roller.



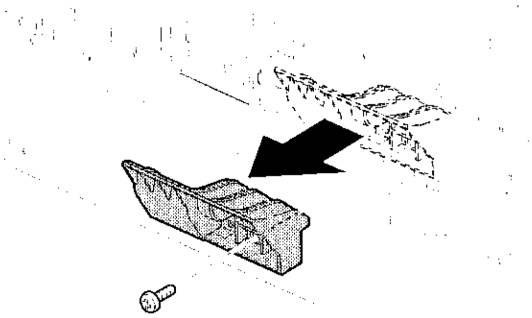
a-2. Paper feed roller

1) Pull out the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2")
2) Unhook the claws to remove the paper guide. (See "a-1. Pickup roller")
3) Unhook the claw to lift up the first paper feed tray feed section, and then remove the paper feed roller.

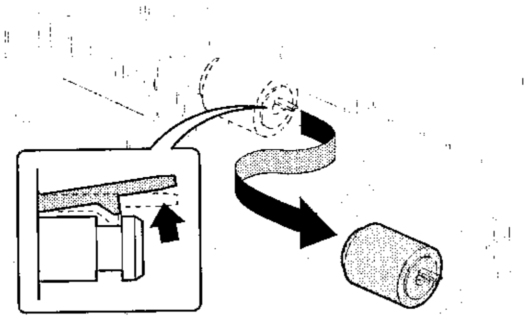


a-3. Separation roller

1) Pull out the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2")
2) Unhook the claws to remove the paper guide. (See "a-1. Pickup roller")
3) Remove the lower paper guide.

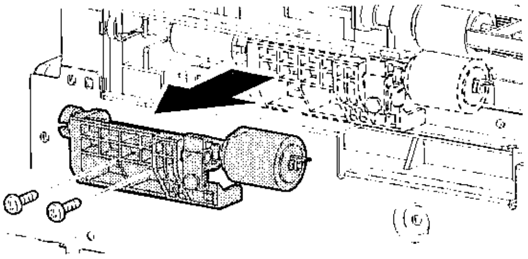


4) Unhook the claws to remove the reverse roller.

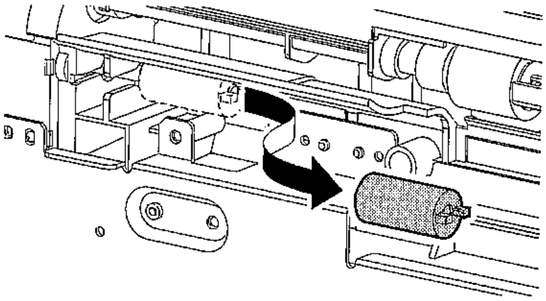


a-4. Torque limiter

1) Pull out the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2")
2) Unhook the claws to remove the paper guide. (See "a-3. Separation roller")
3) Remove the reverse roller unit.

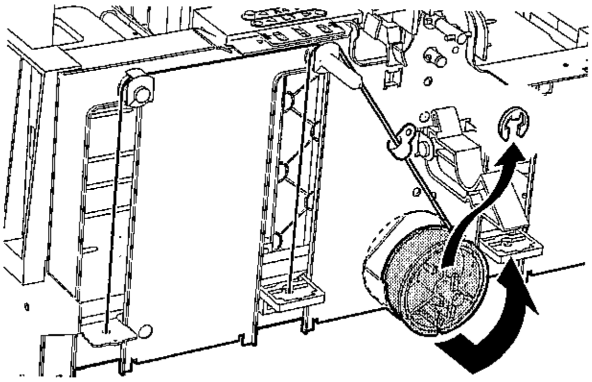


4) Remove the torque limiter.

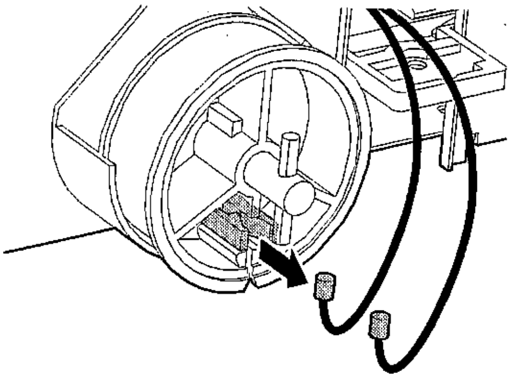


a-5. Lift wire (Rear)

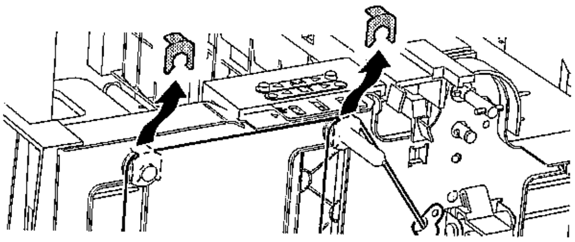
1) Remove the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2" in "(Paper feed tray sections 1 and 2)"
2) Remove the E-ring, slide the winding pulley, and loosen the wire.



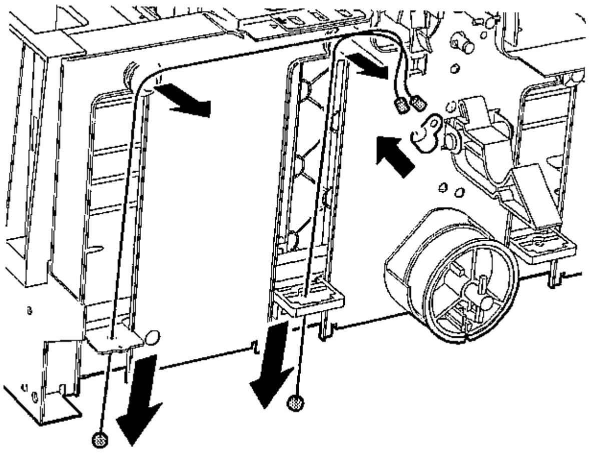
3) Release the pawl, and remove the wire.



4) Remove the plastic E-ring.



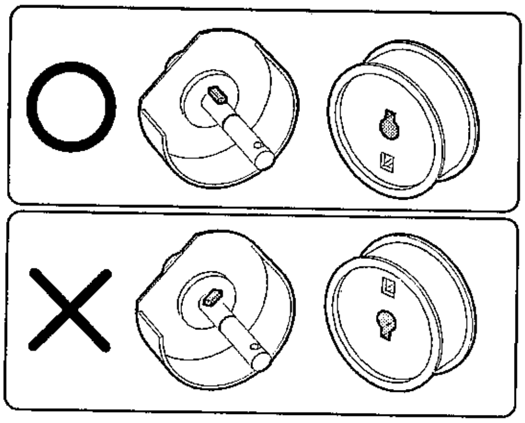
5) Remove the wire.



* Pass the nylon clamp.

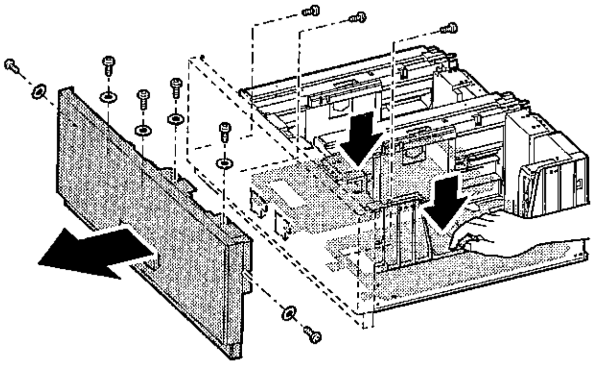
* Attach so that the red wire is on the outside.

* Turn it clockwise to fit with the T-shape pin position and insert.

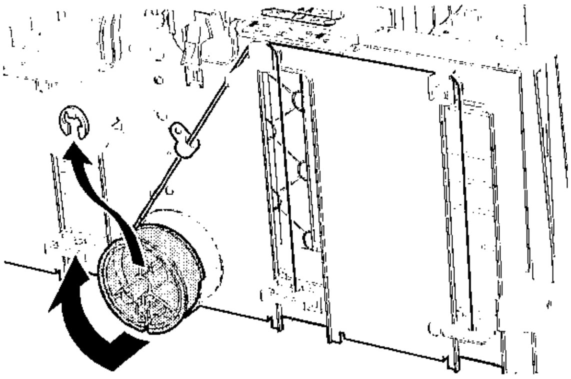


a-6. Lift wire (Front)

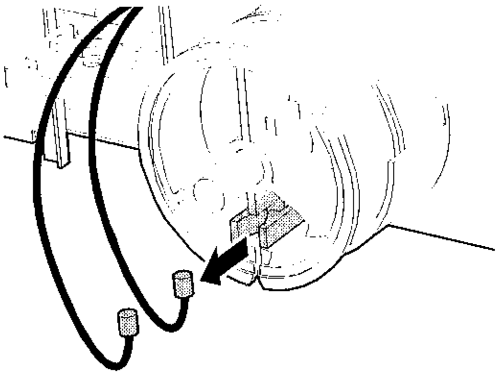
1) Remove the paper feed tray 1/2 unit. (See "(Paper feed tray sections 1 and 2)" in "a. Paper feed tray units 1 and 2")
2) Push down the tray and remove the screw, and remove the paper feed tray 1/2 front cabinet.



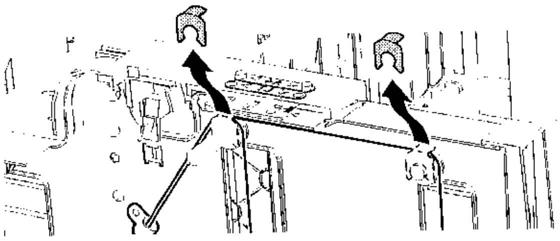
3) Remove the E-ring, slide the winding pulley, and loosen the wire.



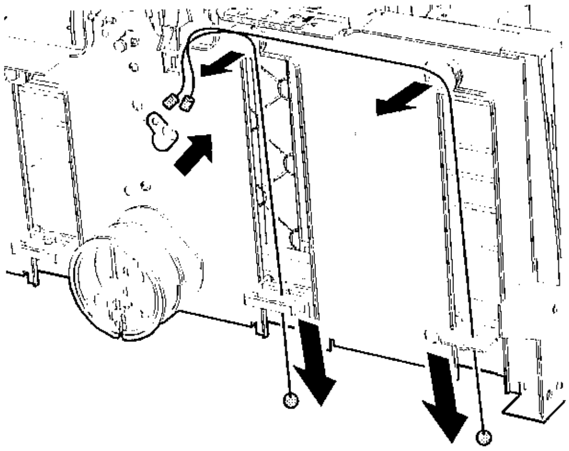
4) Release the pawl, and remove the wire.



5) Remove the plastic E-ring.

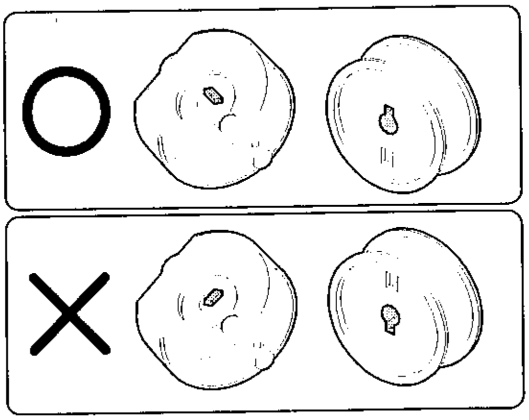


6) Remove the wire.



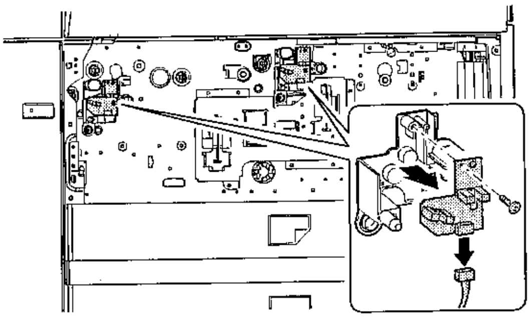
- Pass the nylon clamp.
- Attach so that the red wire is on the outside.

- Turn it counterclockwise and fit with the T-shape pin position and insert.



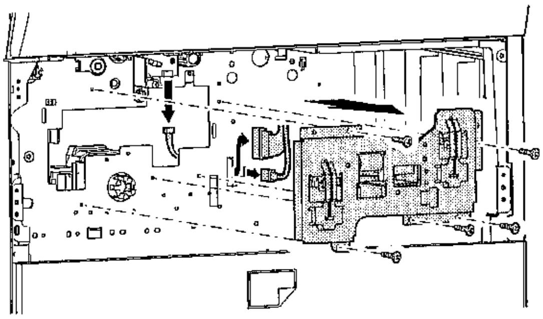
b-1. Paper remaining quantity sensor PWB

1) Remove the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2" in this section)
2) Disconnect the connector, and remove the paper remaining quantity sensor PWB.

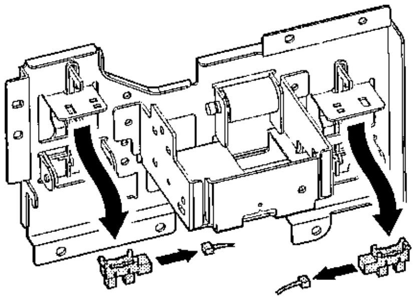


b-2. Paper remaining quantity detector

1) Remove the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2" in this section)
2) Disconnect the connector, and remove the paper feed tray lock arm unit.

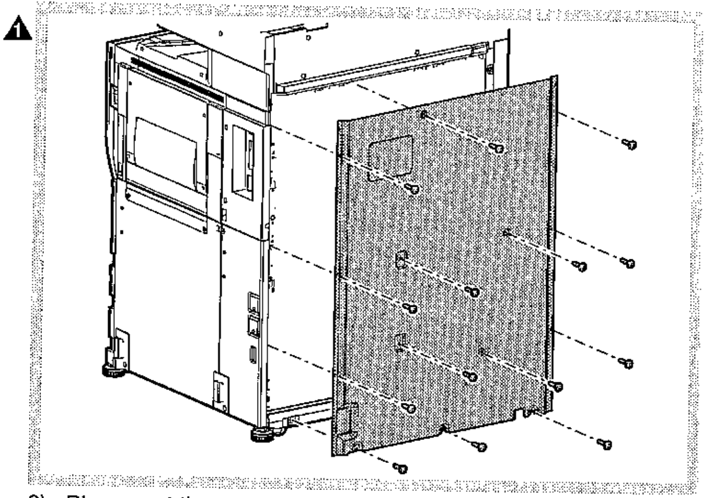


3) Disconnect the connector, and remove the paper remaining quantity detector.

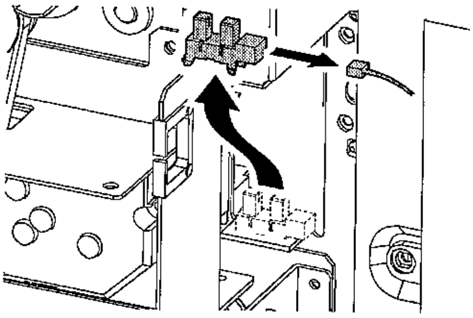


b-3. Paper feed trays 1 and 2 sensor

1) Remove the rear cabinet.

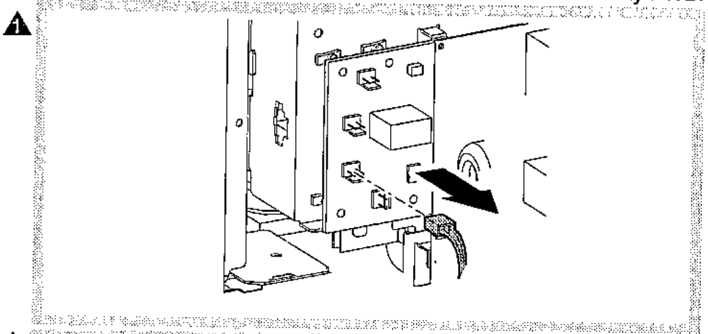
⚠


2) Disconnect the connector, and remove the paper feed trays 1 and 2 sensor.

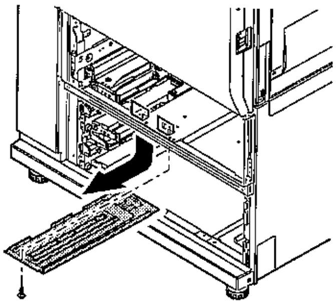


b-4. Dry heater

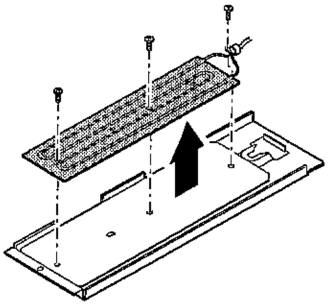
1) Remove the rear cabinet. (See "b-3. Paper feed trays 1 and 2 sensor" in this section)
2) Disconnect the connector from the dehumidifier heater relay PWB.

⚠


⚠ 3) Remove the paper feed tray unit, and remove the dry heater band.
4) Remove the dry heater unit.

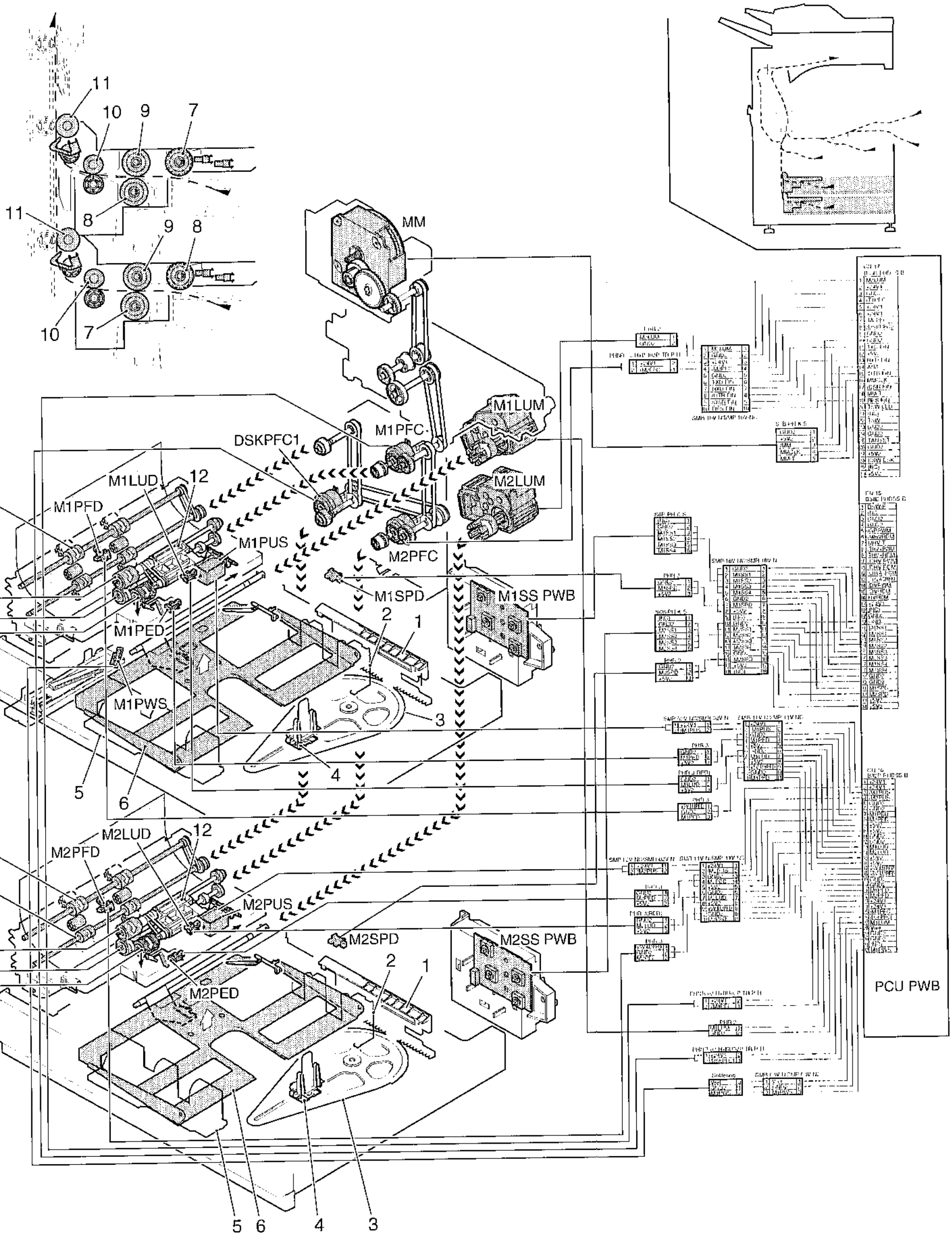


4) Remove the dry heater.



(Paper feed trays 3 and 4)

A. Major parts and signal functions


11
10
9
7
8
11
9
8
10
7
MM
M1LUM
M1PFC
DSKPFC1
M2LUM
M1LUD
12
11
M1PFD
M1PUS
M2PFC
9
8
7
M1SPD
M1SS PWB
M1PED
2
1
M1PWS
3
4
5
6
M2LUD
12
11
M2PFD
10
M2PUS
9
M2SPD
M2SS PWB
8
7
M2PED
2
1
PCU PWB
5
6
4
3

Code	Signal name	Name	Function/Operation	Type	Model	Note
M1LUD	M1LUD	Paper tray upper limit detector (Paper feed tray 3)	Paper tray upper limit detection (Paper feed tray 3)	Transmission type		Paper feed tray system sensor
M1PED	M1PED	Paper empty detector (Paper feed tray 3)	Paper empty detection (Paper feed tray 3)	Transmission type		Paper feed tray system sensor
M1PFD	M1PFD	Paper pass detector (Multi paper feed tray 3)	Paper feed tray 3 paper pass detection	Transmission type		Paper transport system sensor
M1PWS	M1PWS	Paper feed tray paper width detector (Paper feed tray 3)	Multi paper feed tray paper width detection (Paper feed tray 3)	Slide resistor		Analog detector
M1SPD	M1SPD	Paper remaining quantity detector (Paper feed tray 3)	Paper remaining quantity detection (Multi paper feed tray 3)	Transmission type		Paper feed tray remaining quantity sensor
M2LUD	M2LUD	Paper tray upper limit detector (Paper feed tray 4)	Paper tray upper limit detection (Paper feed tray 4)	Transmission type		Paper feed tray system sensor
M2PED	M2PED	Paper empty detector (Paper feed tray 4)	Paper empty detection (Paper feed tray 4)	Transmission type		Paper feed tray system sensor
M2PFD	M2PFD	Paper pass detector (Multi paper feed tray 4)	Paper feed tray 4 paper pass detection	Transmission type		Paper transport system sensor
M2SPD	M2SPD	Paper remaining quantity detector (Paper feed tray 4)	Paper remaining quantity detection (Paper feed tray 4)	Transmission type		Paper feed tray remaining quantity sensor
M1PFC	M1PFC	Paper feed clutch (Paper feed tray 3)	Paper freed tray 3 section roller ON/OFF control	Electromagnetic clutch		
M2PFC	M2PFC	Paper feed clutch (Paper feed tray 4)	Paper freed tray 4 section roller ON/OFF control	Electromagnetic clutch		
DSKPFC1	DSKPFC1	Paper feed tray 3/4 paper transport clutch 1	Paper feed tray 3/4 section paper transport roller ON/OFF control	Electromagnetic clutch		
M1PUS	M1PUS	Paper pickup solenoid (Paper feed tray 3)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid		
M2PUS	M2PUS	Paper pickup solenoid (Paper feed tray 4)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid		
MM	MM	Main motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.	DC brushless motor		Paper pass
M2SS PWB		Paper size detection PWB	Paper size detection			

No.	Name	Function
1	Paper size detection plate	Changes its own position in conjunction with the paper size (length) adjustment lever. By this operation, the paper size detector detects the paper size.
2	Paper widht guide R	Suppresses skew to the minimum by restricting the paper width.
3	Paper size detection rotation plate	Changes its own position in conjunction with the paper size (length) adjustment lever. By this operation, the paper size detection plate position is changed and the paper size detector detects the paper size.
4	Paper size (length) guide plate	Regulates the paper size (length).
5	Paper widht guide L	By restricting the paper width, skew is restricted to the minimum.
6	Lift plate	Lifts the paper to maintain the paper feed position at the fixed position.
7	Paper pickup roller	Sends paper to the paper feed roller.
8	Separation roller	Separate paper to prevent against double feed
9	Paper feed roller	Feeds paper to the paper transport section.
10	Transport roller 8 (Paper feed tray 3) Transport roller 5 (Paper feed tray 4)	Transports paper from the paper feed tray 3 to the transport rollers 9 and 10. Transports paper from the paper feed tray 4 to the transport rollers 6 and 7.
11	Transport roller 10 (Paper feed tray 3) Transport roller 7 (Paper feed tray 4)	Transports paper from the transport rollers 7 and 8 to the transport roller 11. Transports paper from the transport roller 5 to the transport roller 10.
12	Torque limiter	Provides a certain level of resistance power for the paper separation roller rotation to prevent against double feed.

B. Operational descriptions

(1) Each paper feed tray paper size detection method

a. Multi-purpose paper feed tray (Tray 3), paper feed tray (Paper feed tray 4)

1) Paper width detection

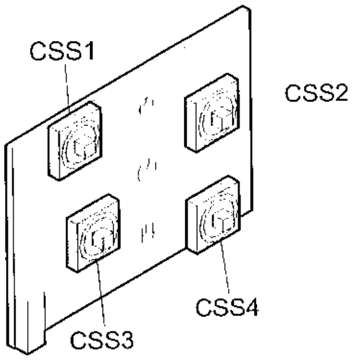
The paper width is calculated with the VR voltage value (A/D conversion value) linked with the side guide plate.

Paper width and paper size (set in the range of standard value ±6 [mm]).

Width size detection pattern	Paper size	Standard value [mm]	Range [mm]
A	A3/A4	297.0	303.0 - 291.0
B	WLT/LT	279.4	285.4 - 273.4
C	B4/B5	257.0	263.0 - 251.0
D	LG/LTR/Foolscap	215.9	221.9 - 209.9
E	A4R	210.0	216.0 - 204.0
F	Exective-R	184.1	190.1 - 178.1
G	B5R	182.0	188.0 - 176.0

2) Paper size detection

The paper size detection is made by the combination of the cassette paper size detector 1 to 4.



Relationship Between Paper Size and Detection by the Paper Size Detector

Vertical size detection pattern	Detection SW status				AB size	Inch size	Width of detection range
	CSS1	CSS2	CSS3	CSS4			
1	ON	ON	OFF	ON	B5	Extra	147.0 - 198.0
2	OFF	ON	OFF	ON	A4	LT	198.0 - 237.0
3	OFF	ON	ON	ON	B5R	EX-R	237.0 - 274.0
4	OFF	OFF	ON	ON	A4R	LTR	274.0 - 314.0
5	ON	OFF	ON	ON	Foolscap	Extra	314.0 - 347.0
6	ON	OFF	ON	OFF	B4	LGL	347.0 - 389.0
7	ON	ON	ON	OFF	A3	WLT	389.0 - 432.8
0	OFF	OFF	OFF	OFF	Paper feed tray not attached		

3) Combination of size detection

Paper size	Width detection pattern	Vertical detection pattern
B5	C	1
A4	A	2
B5R	G	3
A4R	E	4
Foolscap	D	5
B4	B	6
A3	A	7
LT	B	2
EX-R	F	3
LTR	D	4
LGL	D	6
WLT	B	7

(2) Remaining paper detection

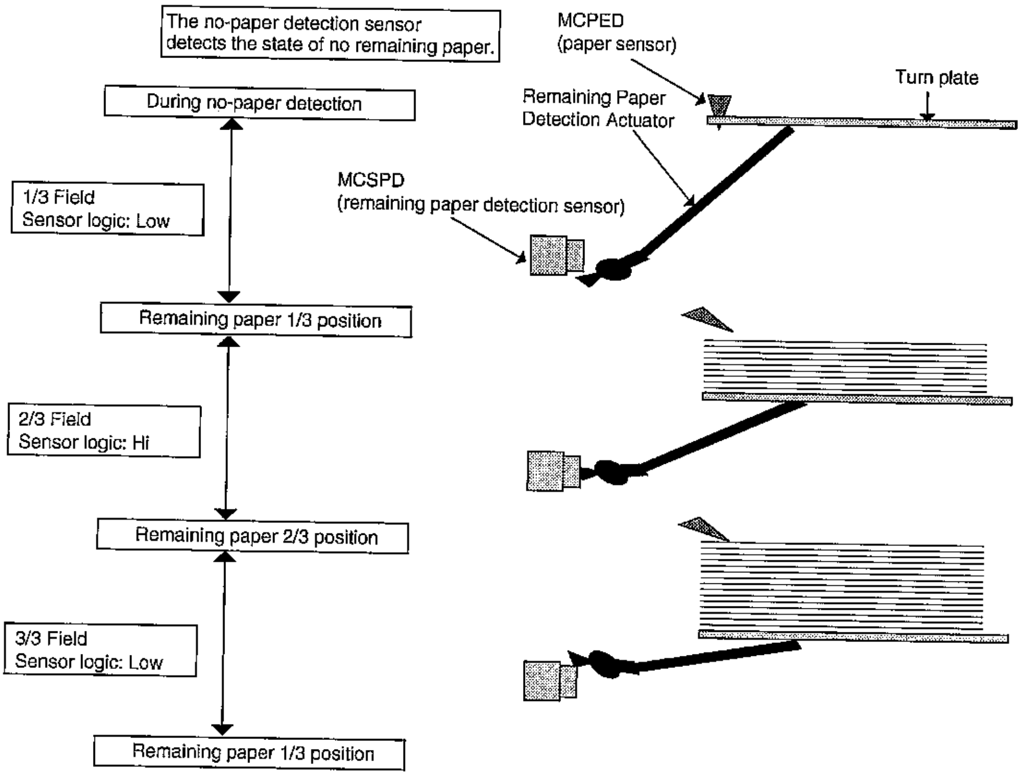
a. Remaining paper detection

Remaining paper detection is performed according to four stages, i.e. three stages with paper and one stage with no paper, and the result is displayed.

b. Detection method

The number of remaining sheets is determined according to the number of times the remaining paper sensor changes from the time the paper feed tray starts lifting up to the time when the upper detection sensor comes ON.

(Figure showing state transition of the remaining paper detection sensor during tray elevation and changes in status according to the number of remaining sheets)


The no-paper detection sensor detects the state of no remaining paper.
MCPED
(paper sensor)
Turn plate
During no-paper detection
Remaining Paper
Detection Actuator
1/3 Field
Sensor logic: Low
MCSPD
(remaining paper detection sensor)
Remaining paper 1/3 position
2/3 Field
Sensor logic: Hi
Remaining paper 2/3 position
3/3 Field
Sensor logic: Low
Remaining paper 1/3 position

⚠ : Feb. 6 2004

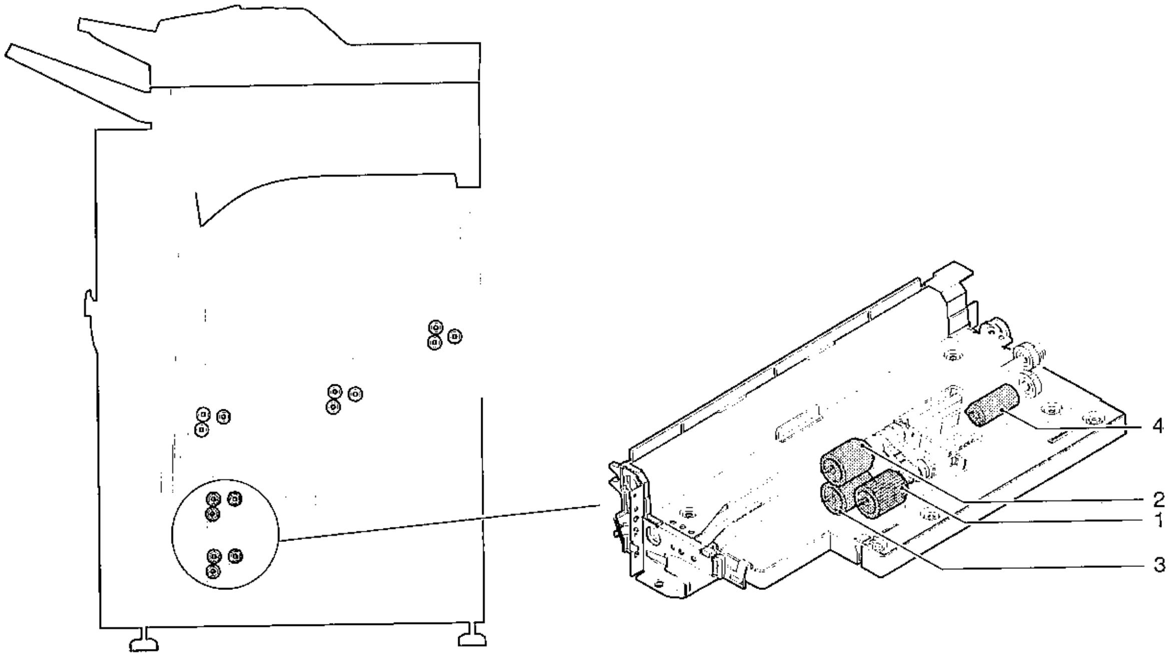
C. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace Δ: Adjust ☆: Lubricate ⊔: Shift position

		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N, AR-M700U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Paper Feed Trays 3 and 4	1	Pickup roller	×	×	×	×	×	×	×	×	×	(Note 1)
	2	Paper feed roller	×	×	×	×	×	×	×	×	×	(Note 1)
	3	Separation roller	×	×	×	×	×	×	×	×	×	(Note 1)
	4	Torque limiter	×	×	×	×	×	×	×	×	×	(Note 1)

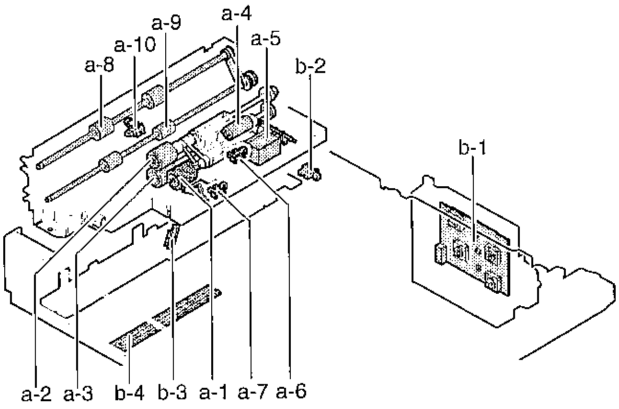
(Note 1) Replacement reference: For replacement, refer to each paper feed port counter value.
Torque limiter: 800K (However, 400K for manual paper feed section)
Paper feed tray 3/4, paper feed unit section: 100K or 1 year



(2) Maintenance and parts replacement

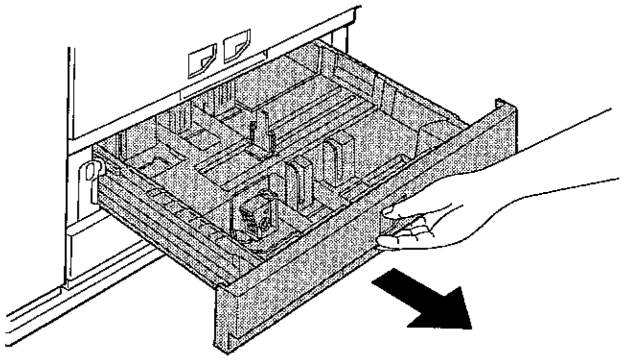
(List of Replacement Parts)

No.	Unit	Parts		
a	Paper feed tray units 3 and 4			
		1	Pickup roller	×
		2	Paper feed roller	×
		3	Separation roller	×
		4	Torque limiter	×
		5	Paper pickup solenoid	
		6	Paper feed tray upper limit detector	
		7	Paper feed tray empty detector	
		8	Transport roller 8, 10	
		9	Transport roller 5, 7	
		10	Paper pass detector	
b	Others	1	Paper size detection PWB	
		2	Paper remaining quantity detector	
		3	Paper feed tray paper width detector	
		4	Dry heater	

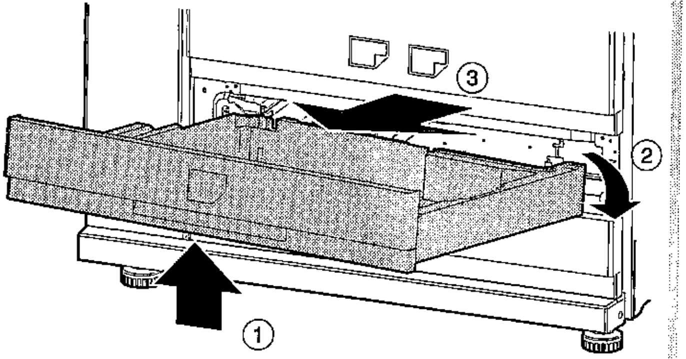


⚠ a. Paper feed tray units 3 and 4

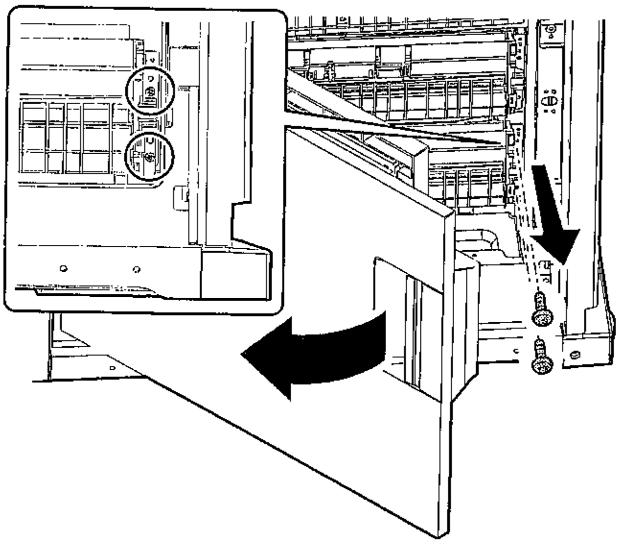
1) Gently pull out the paper feed tray until it stops.



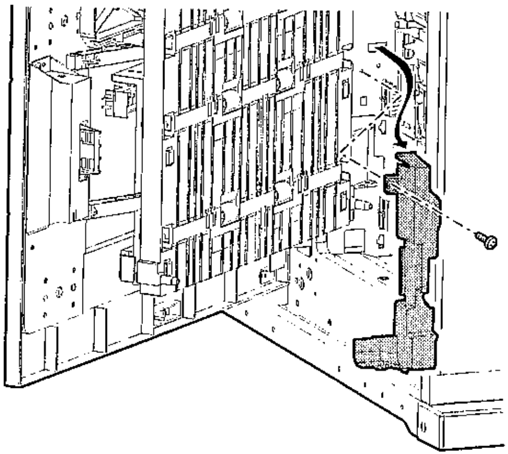
2) Lifting up the paper feed tray unit slightly, remove it at an angle from the right side.



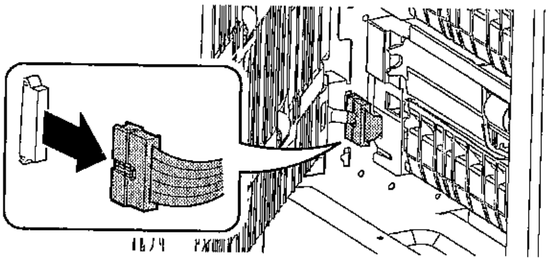
3) Open the bottom left cabinet.



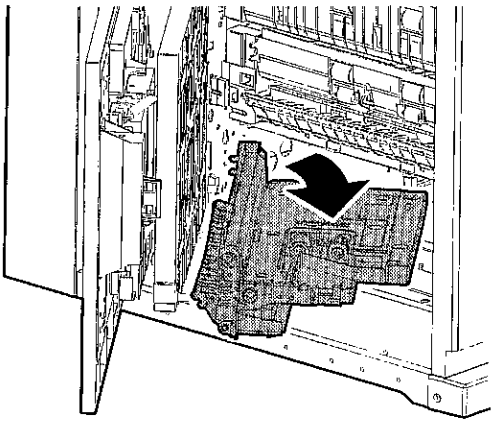
4) Remove the connector cover.



⚠ 5) Disconnect the connectors.

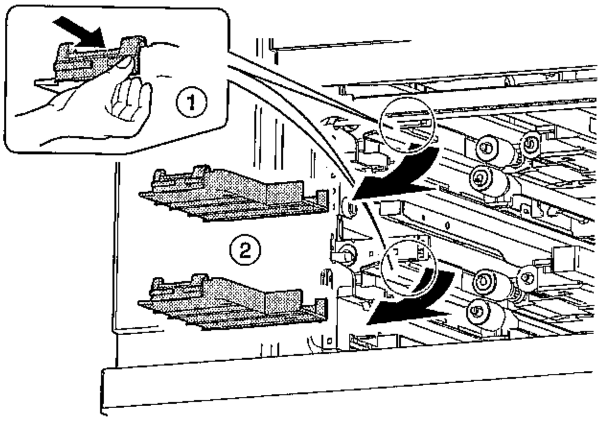


6) Remove the paper feed tray paper feed units 3 and 4 from the lower shelf.

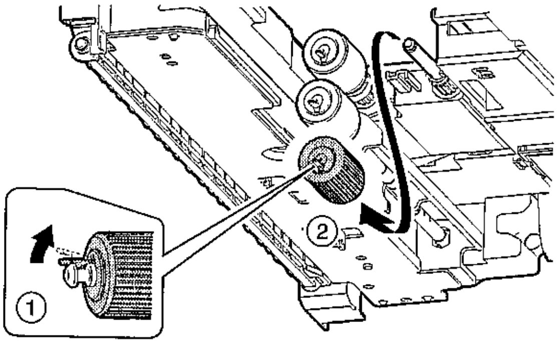


a-1. Pickup roller

1) Remove the paper feed tray units 3 and 4. (See "a. Paper feed tray units 3 and 4")
2) Remove the paper guide.

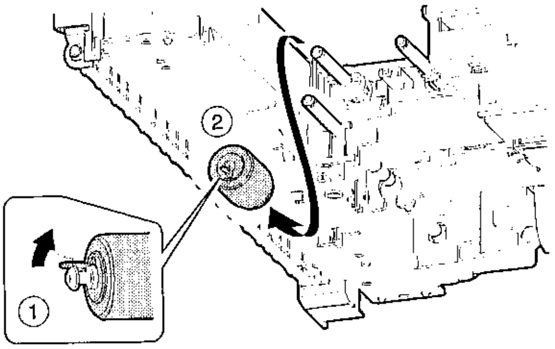


3) Unhook the claws to remove the pickup roller.



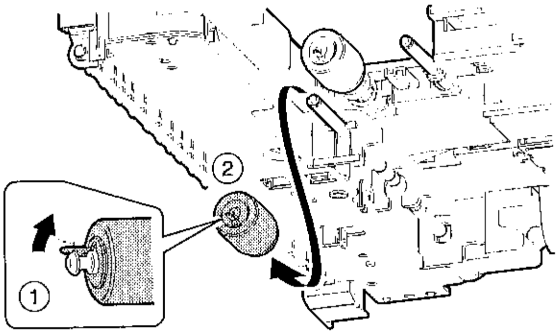
a-2. Paper feed roller

1) Remove the paper feed tray units 3 and 4. (See "")
2) Remove the paper guide. (See "a-1. Pickup roller")
3) Release the pawl, and remove the paper feed roller.



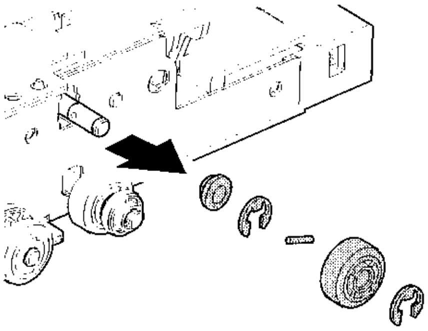
a-3. Separation roller

1) Remove the paper feed tray units 3 and 4. (See "")
2) Remove the paper guide. (See "a-1. Pickup roller")
3) Release the pawl, and remove the separation roller.

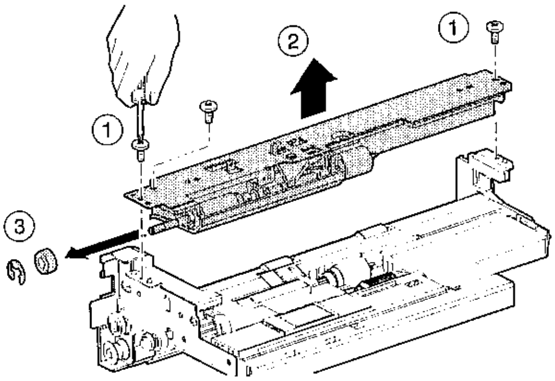


a-4. Torque limiter

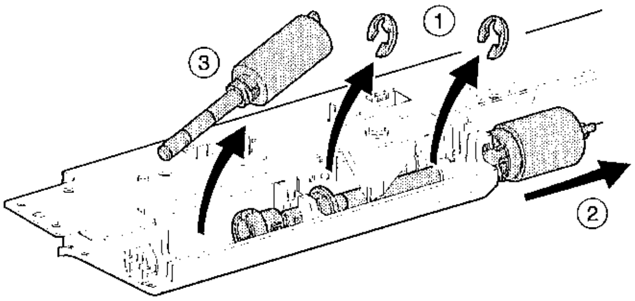
1) Remove the paper feed tray units 3 and 4. (See "")
2) Remove the E-ring, the gear and the pin.



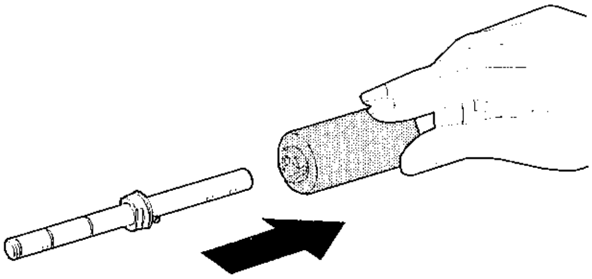
3) Remove the E-ring and the bearing.
4) Remove the separation roller unit.



5) Remove the E-ring, and one-way clutch.
6) Remove the E-ring and shift the separation roller shaft.

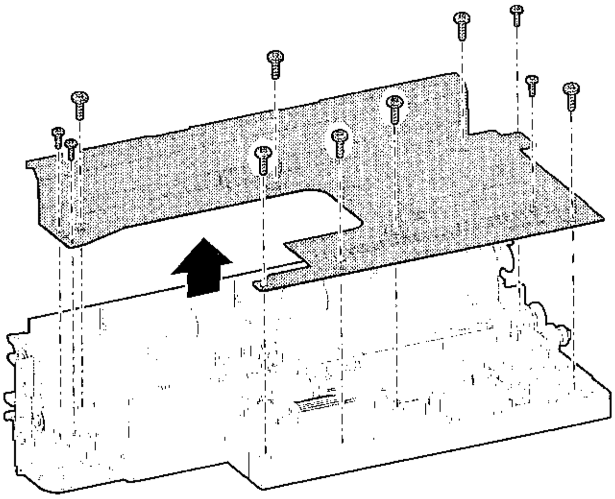


7) Remove the shaft unit.
8) Remove the torque limiter.

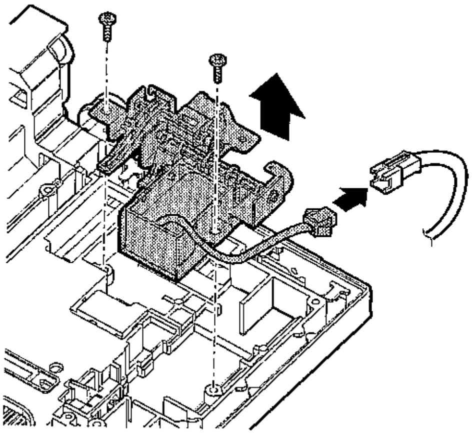


a-5. Paper pickup solenoid

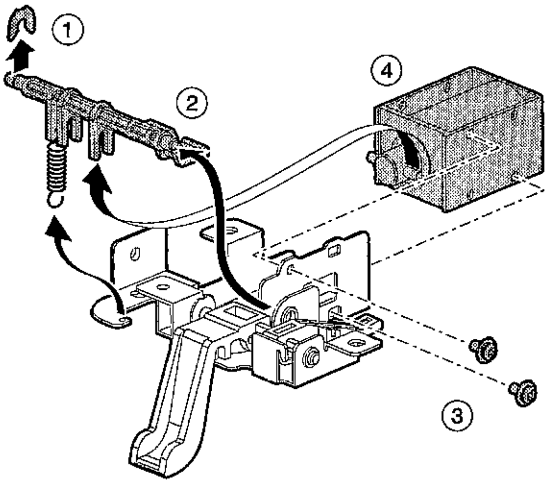
1) Remove the paper feed tray 3/4. (See "")
2) Remove the cover.



3) Remove the solenoid unit.



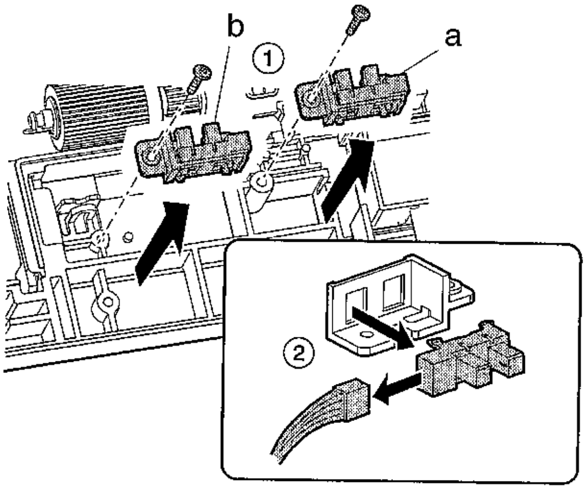
4) Remove the paper pickup solenoid.



a-6. Paper feed tray upper limit detector

a-7. Paper feed tray empty detector

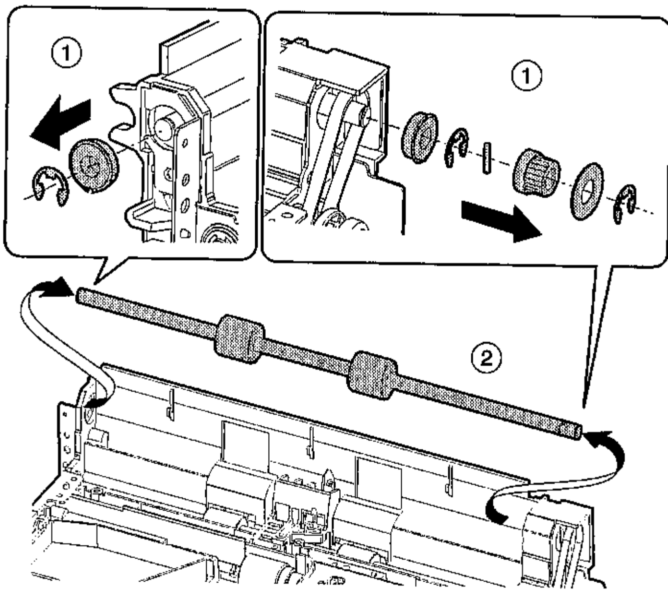
1) Remove the paper feed tray 3/4. (See "")
2) Remove the cover. (See "a-5. Paper pickup solenoid")
3) Remove the paper feed tray upper detector unit (a) and the paper feed tray empty detector unit (b).



4) Remove the detector.

a-8. Transport roller 8, 10

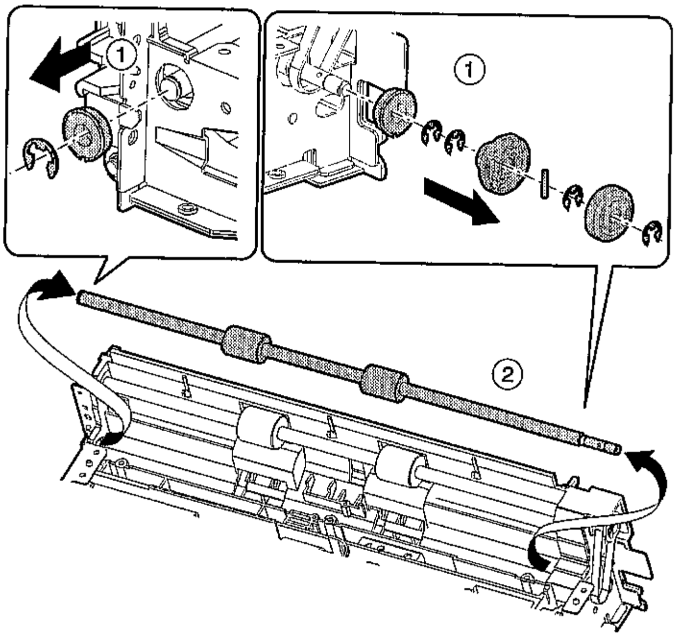
1) Remove the paper feed tray 3/4. (See "")
2) Remove the cover.(See "a-5. Paper pickup solenoid")
3) Remove the E-ring and remove the pulley bearing.



4) Remove the transport roller 8, 11.

a-9. Transport roller 5, 7

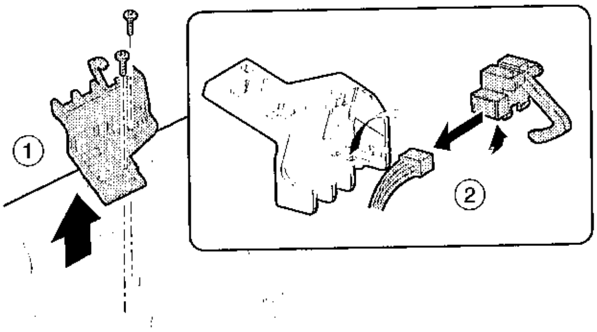
1) Remove the paper feed tray 3/4. (See "")
2) Remove the cover. (See "a-5. Paper pickup solenoid")
3) Remove the E-ring and remove the pulley bearing.



4) Remove the transport roller 5, 7.

a-10. Paper pass detector

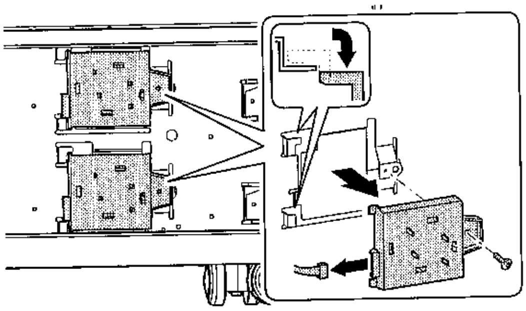
1) Remove the paper feed tray 3/4.
2) Remove the cover. (See "a-5. Paper pickup solenoid")
3) Remove the paper pass detector unit.



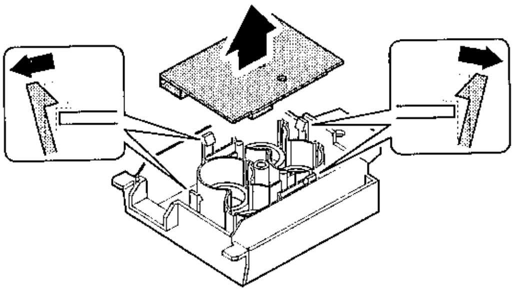
4) Remove the paper pass detector.

b-1. Paper size detection PWB

1) Remove the paper feed unit. (See "a-1. Pickup roller" in this section)
2) Disconnect the connector, and remove the paper size detection PWB unit.

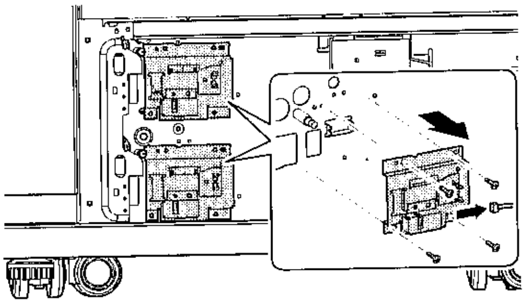


3) Release the pawl, and remove the paper size detection PWB.

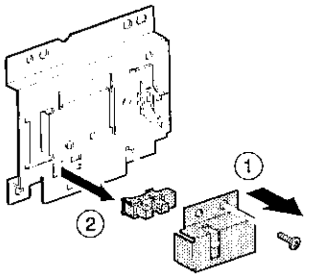


b-1. Paper remaining quantity detector

1) Remove the paper feed unit. (See "a-1. Pickup roller" in this section)
2) Disconnect the connector, and remove the paper remaining quantity detector unit.

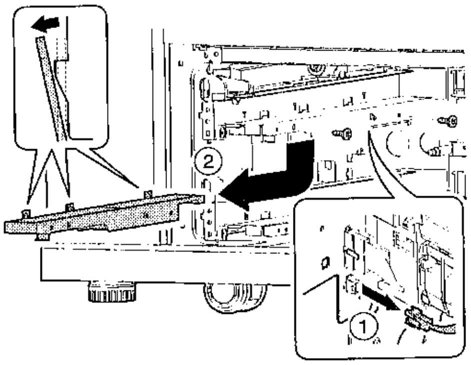


3) Remove the paper remaining quantity detector cover. Remove the paper remaining quantity detector.

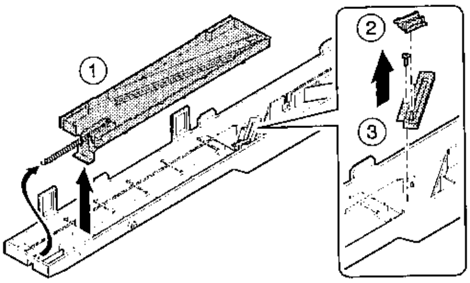


b-3. Paper feed tray paper width detector

1) Remove the paper feed tray 3/4 unit lower. (See "a. Paper feed tray units 3 and 4" in this section)
2) Remove the paper feed unit. (See "a-1. Pickup roller" in this section)
3) ⚠ Disconnect the connector, and release the pawl, and remove the width detection unit.

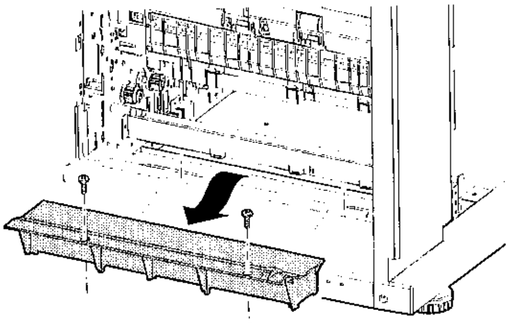


4) Remove the spring, and remove the paper width mounting base. Remove the width detection arm and remove the paper feed tray paper width detector.



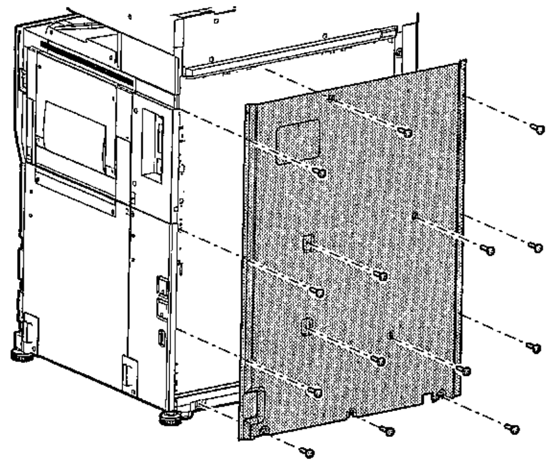
b-4. Dry heater

1) Remove the paper feed tray 3/4 unit lower. (See "a. Paper feed tray units 3 and 4" in this section)
2) Remove the paper feed unit. (See "a-1. Pickup roller" in this section)
3) ⚠ Remove the paper feed lower cover.

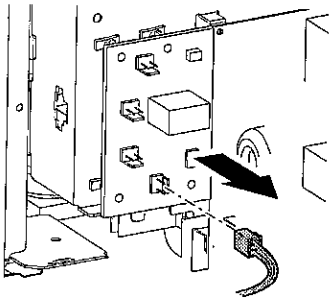


▲1 : Feb. 6 2004

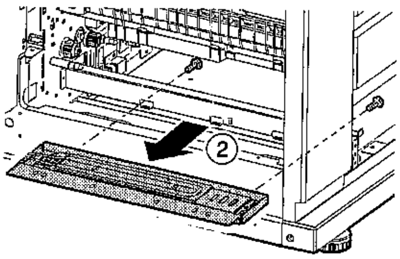
▲1 4) Remove the rear cabinet.



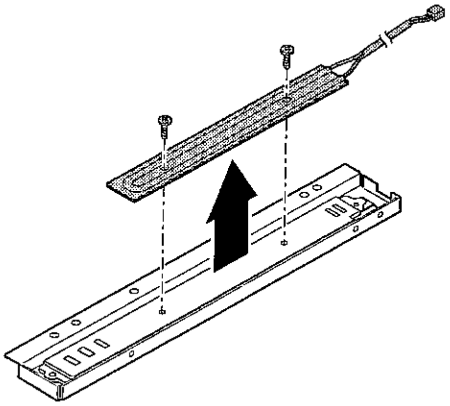
5) Disconnect the connector from the dehumidifying heater relay PWB, and remove the band.



6) Remove the dry heater unit.



7) Remove the dry heater.



[Paper Transport Section]

Outline

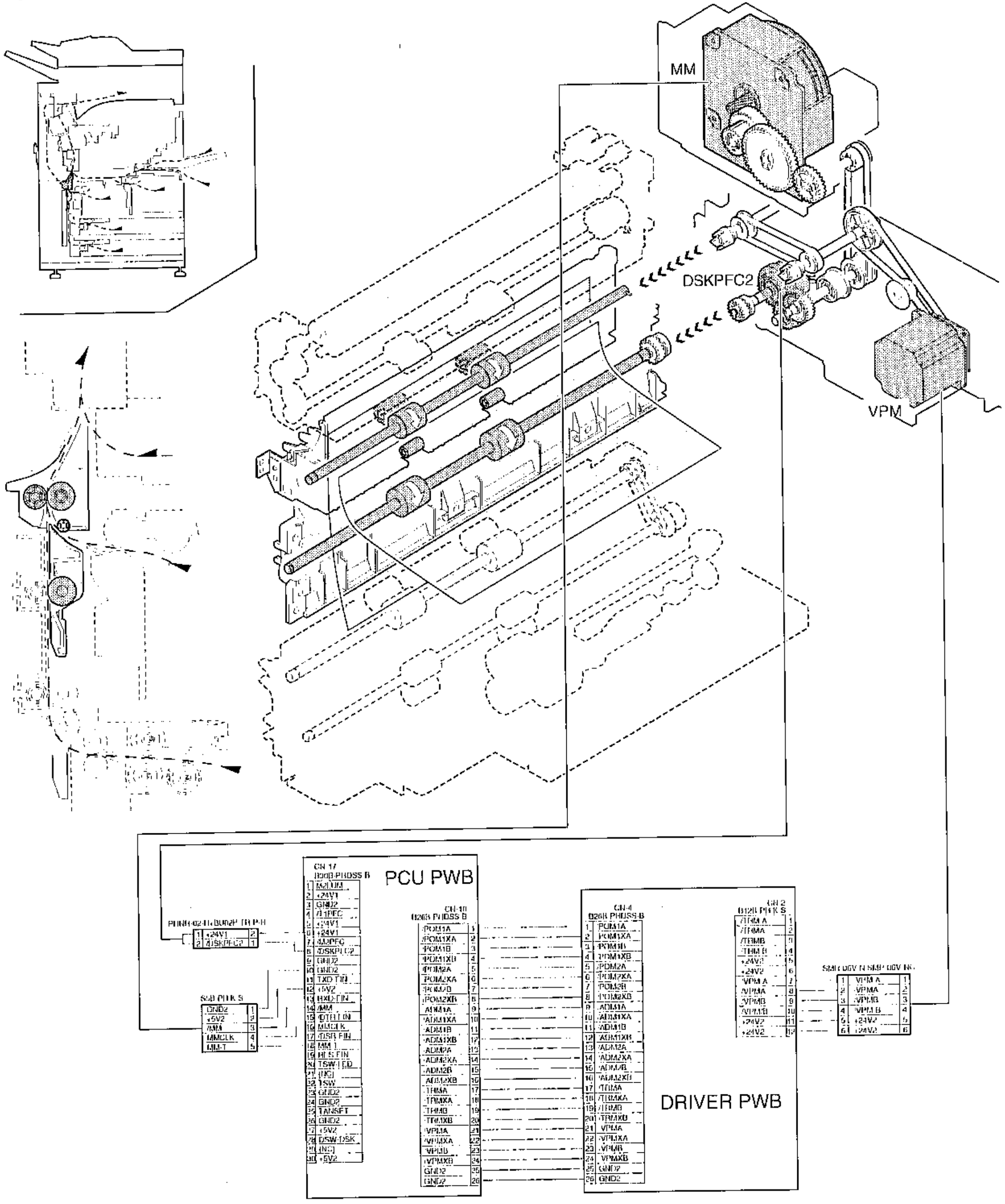
The paper transport section serves the function of transferring paper from each paper feed port to the registration roller section.

Paper from manual feed, paper feed tray units 1 and 2 (optional), and the right paper feed tray of the paper feed tray units 1 and 2 is transported horizontally, whereas paper from the left paper feed tray of the paper feed tray units 1 and 2, paper feed tray 3 and paper feed tray 4 is transported vertically to the registration roller section.

After the leading edge of the paper is synchronized with the leading edge of the drum image in the registration roller section, the paper that is transfer printed with the image in the transfer section passes through the fusing section and is discharged either face-down or face-up.

(Vertical paper transport section 1)

A. Major parts and signal functions


MM
DSKPFC2
VPM
PCU PWB
DRIVER PWB
CN-17
PHNR-02-H BU02P-TR-P-H
1 +24V1 2
2 /DSKPFC2 1
S5B-PH-K-S
GND2 1
+5V2 2
/MM 3
MMCLK 4
MM-T 5
1 M2LUM
2 +24V1
3 GND2
4 /L1PFC
5 +24V1
6 +24V1
7 /L2PFC
8 /DSKPFC2
9 GND2
10 GND2
11 TXD-FIN
12 +5V2
13 RXD-FIN
14 /MM
15 /DTR-FIN
16 MMCLK
17 /DSR-FIN
18 MM-T
19 RES-FIN
20 TSW-LED
21 (NC)
22 TSW
23 GND2
24 GND2
25 TANSET
26 GND2
27 +5V2
28 DSW-DSK
29 (NC)
30 +5V2
CN-10
026B-PHDSS-B
/POM1A 1
/POM1XA 2
/POM1B 3
/POM1XB 4
/POM2A 5
/POM2XA 6
/POM2B 7
/POM2XB 8
/ADM1A 9
/ADM1XA 10
/ADM1B 11
/ADM1XB 12
/ADM2A 13
/ADM2XA 14
/ADM2B 15
/ADM2XB 16
/TRMA 17
/TRMXA 18
/TRMB 19
/TRMXB 20
/VPMA 21
/VPMXA 22
/VPMB 23
/VPMXB 24
GND2 25
GND2 26
CN-4
026B-PHDSS-B
CN-2
B12B-PH-K-S
/TRM A 1
/TRMA 2
/TRMB 3
/TRM B 4
+24V2 5
+24V2 6
/VPM A 7
/VPMA 8
/VPMB 9
/VPM B 10
+24V2 11
+24V2 12
SMP-06V-N SMP-06V-NC
1 VPM A 1
2 /VPMA 2
3 /VPMB 3
4 VPM B 4
5 +24V2 5
6 +24V2 6

⚠: Feb. 6 2004

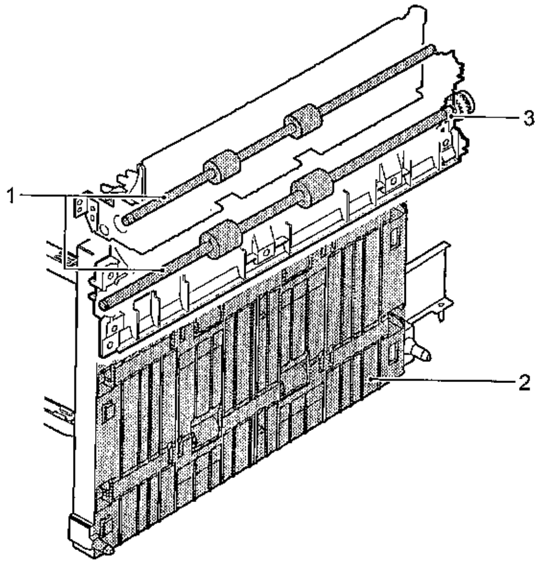
Code	Signal name	Name	Function/Operation	Type	Model	Note
⚠ DSKPFC2	DSKPFC2	Paper feed tray 3/4 paper transport clutch 2	Paper transport roller 11 ON/OFF control	Electromagnetic clutch		
⚠ VPM	VPM	Vertical paper transport motor	Drives the paper transport rollers 4 and 13.	Stepping motor		Normal speed mode
MM	MM	Main motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.	DC brushless motor		Paper pass

B. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❑: Shift position

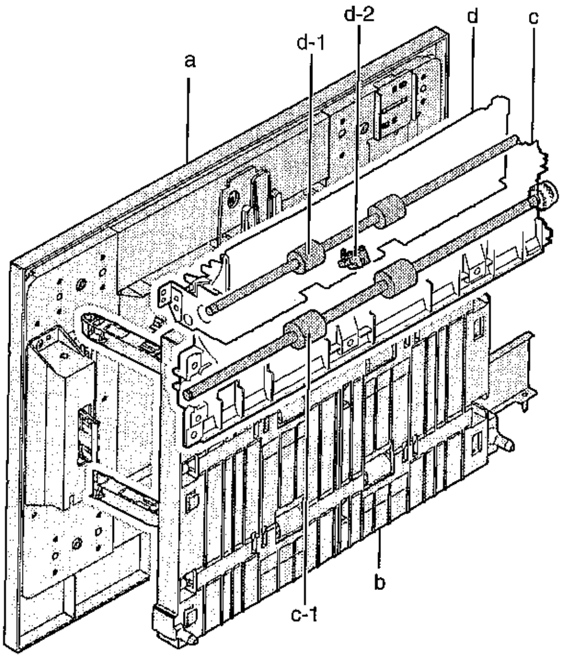
		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
⚠		AR-M620U/N, AR-M700U/N (PM: 300K)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Vertical paper transport	1	Transport rollers	×	○	○	○	○	○	○	○	○	
	2	Transport paper guides	○	○	○	○	○	○	○	○	○	
	3	Shaft (Grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0012QSZZ



(2) Maintenance and parts replacement

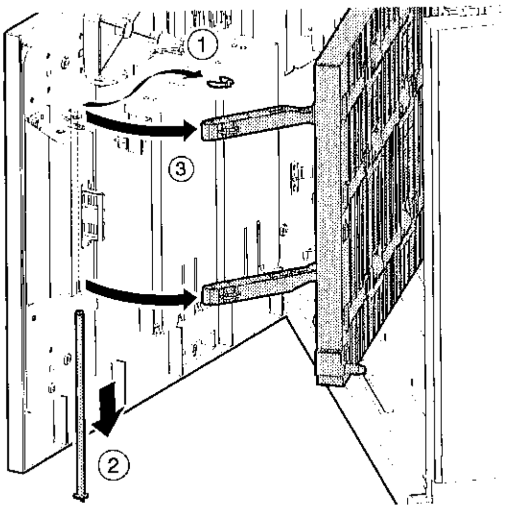
(List of Replacement Parts)

No.	Unit		Parts		
a	Left lower cabinet unit				
b	Left vertical transport unit	○			
c	Paper feed tray 1 and 2 left PG unit	○	1	Transport roller 11 (Drive)	×○
d	Vertical transport upper unit	○	1	Transport roller 13 (Drive)	×○
			2	Transport sensor	

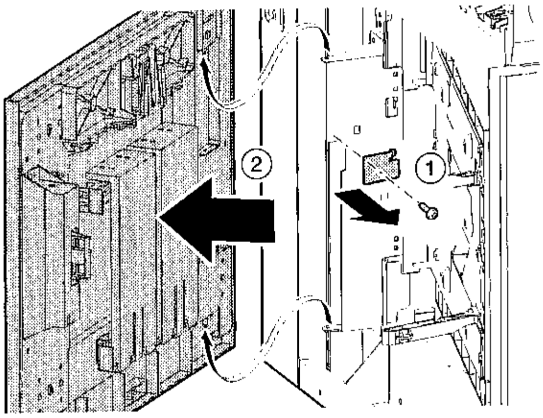


a. Left lower cabinet unit

1) Open the left lower cabinet.
2) Remove the resin E-ring, and remove the pressure fulcrum shaft.

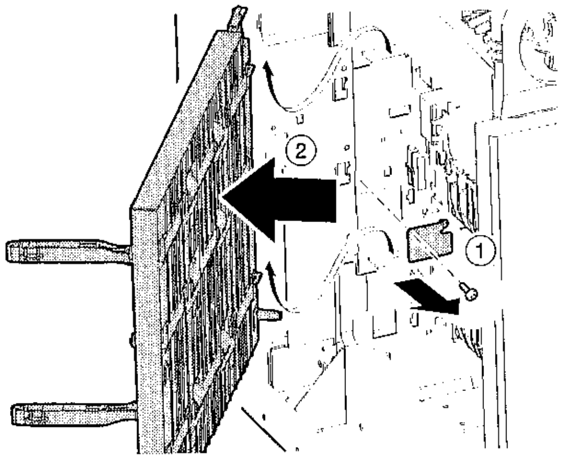


3) Remove the left vertical transport PG stopper plate.
4) Open the left door, and remove the left lower cabinet unit.



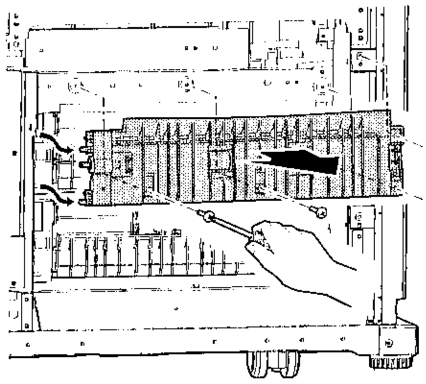
b. Left vertical transport unit

1) Remove the left lower cabinet unit. (See "a. Left lower cabinet unit")
2) Remove the left vertical transport PG stopper plate.
3) Open the left vertical transport unit, and remove it.



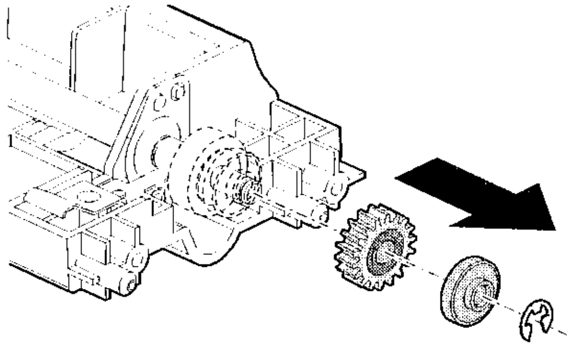
c. Paper feed tray 1 and 2 left PG unit

1) Remove the left lower cabinet. (See "a. Left lower cabinet unit")
2) Remove the left vertical transport unit. (See "b. Left vertical transport unit")
3) Remove the paper feed tray 1 and 2 left PG unit.



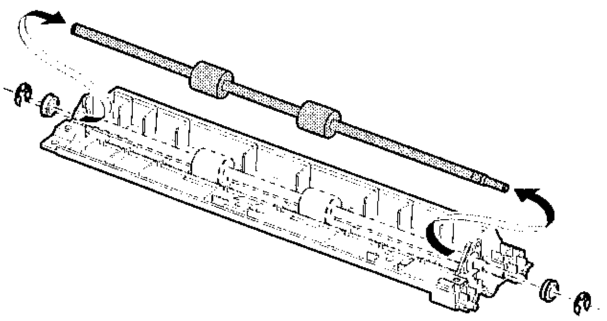
c-1. Transport roller 11 (Drive)

1) Remove the paper feed tray 1 and 2 left PG unit. (See "c. Paper feed tray 1 and 2 left PG unit")
2) Remove the E-ring, the drive collar, and the one-way gear.



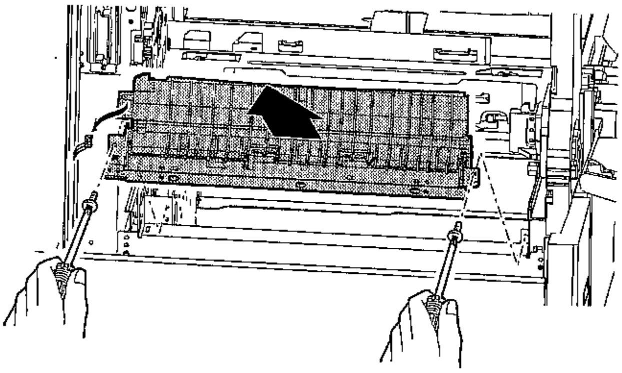
＊ Be careful of the installing direction.

3) Remove the E-ring and the bearing, and remove the transport roller 11 (Drive).



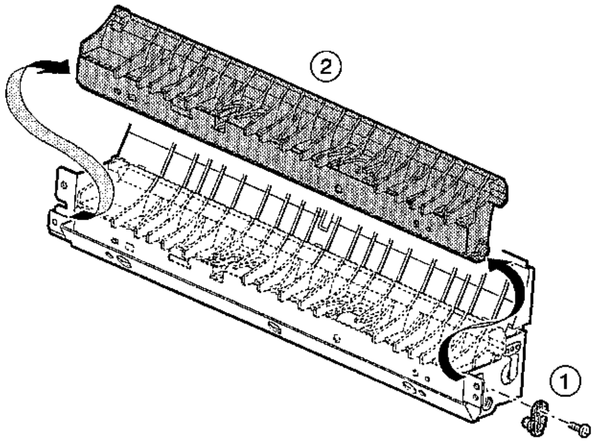
d. Vertical transport upper unit

1) Open the left door.
2) Remove the resist roller unit.
3) Disconnect the connector, and remove the vertical transport upper unit.

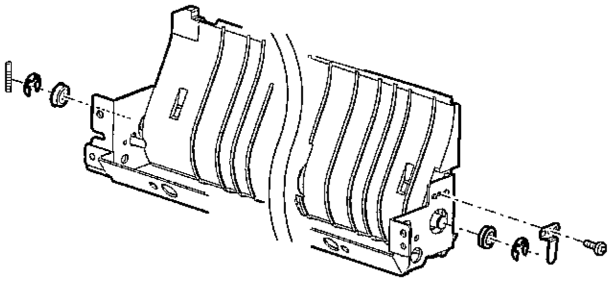


d-1. Transport roller 13 (Drive)

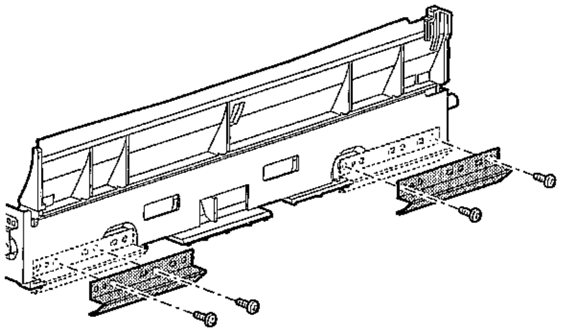
1) Remove the upper transport fulcrum plate holder, and remove the vertical transport upper open/close PG.



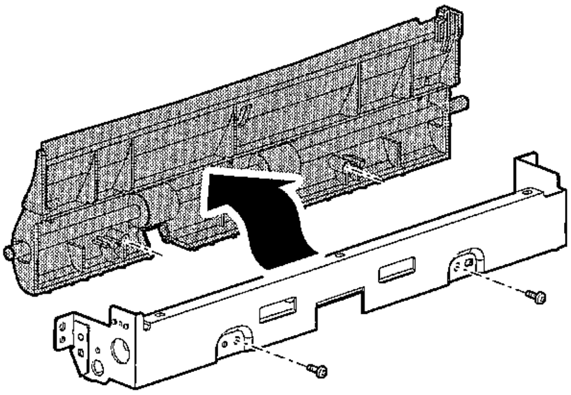
2) Remove the open/close PG earth, and remove the drive connection stopper screw and the bearing.



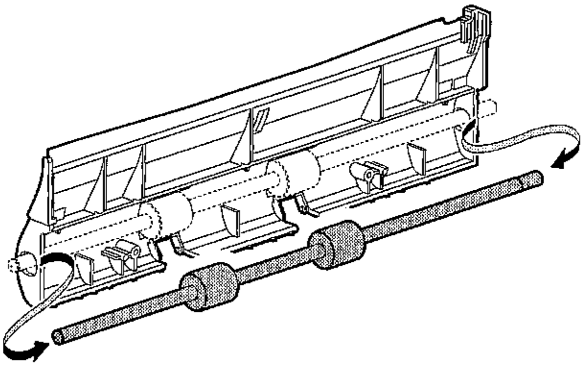
3) Remove the upper PG holding plate.



4) Remove the vertical transport upper PG.

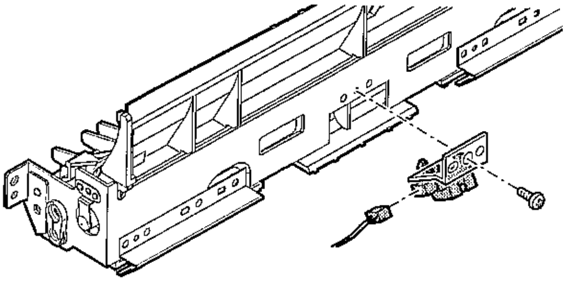


5) Remove the transport roller 13 (Drive).



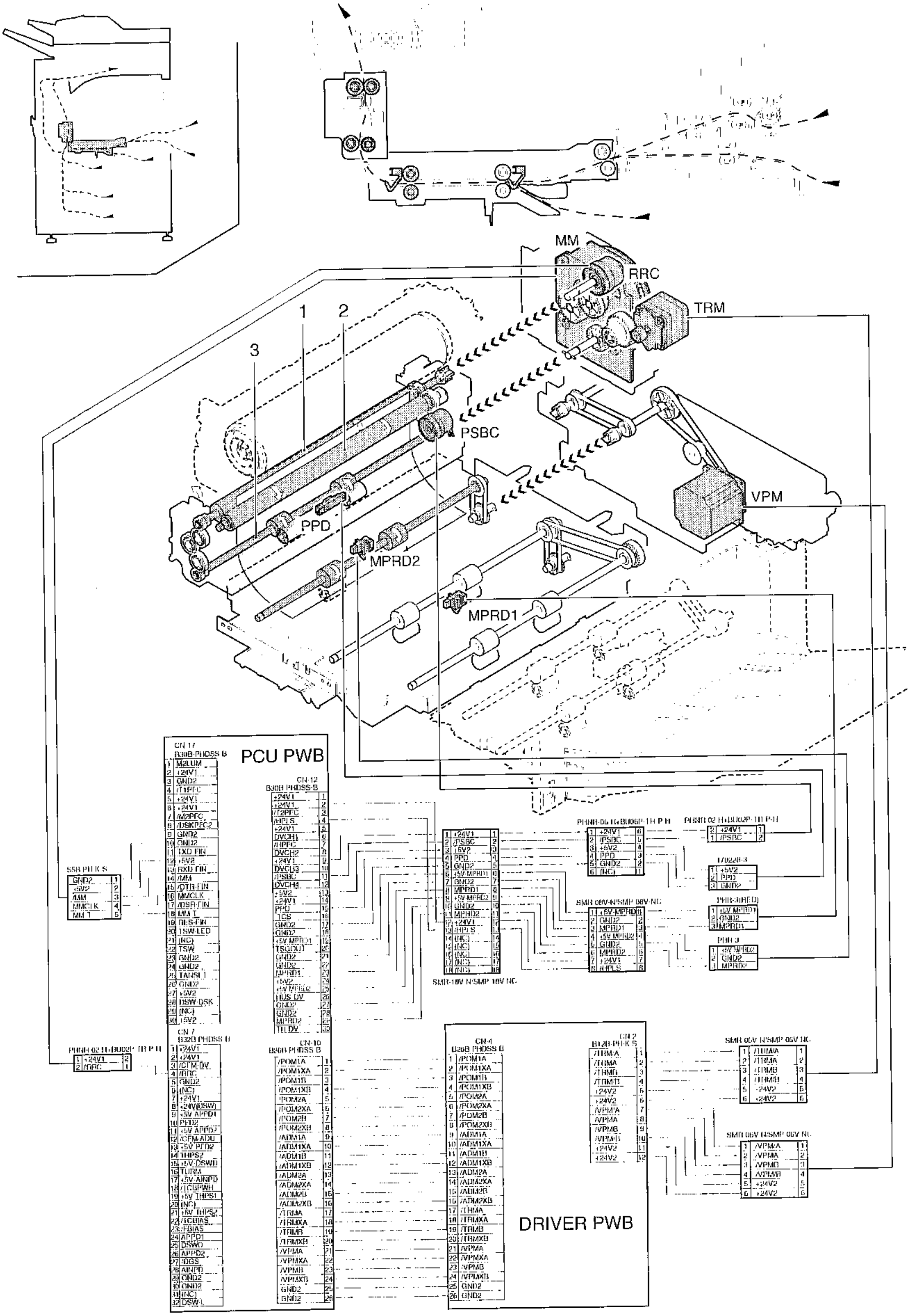
d-2. Transport sensor

1) Remove the vertical transport unit. (See "d. Vertical transport upper unit")
2) Check the sensors.



(Vertical paper transport section 2)

A. Major parts and signal functions


MM
RRC
TRM
1
2
3
PSBC
VPM
PPD
MPRD2
MPRD1
PCU PWB
CN-17
B30B-PHDSS-B
1 M2LUM
2 +24V1
3 GND2
4 /T1PFC
5 +24V1
6 +24V1
7 /M2PFC
8 /DSKPFC2
9 GND2
10 GND2
11 TXD-FIN
12 +5V2
13 RXD-FIN
14 /MM
15 /DTR-FIN
16 MMCLK
17 /DSR-FIN
18 MM-T
19 DES-FIN
20 TSW-LED
21 (NC)
22 TSW
23 GND2
24 GND2
25 TANSL1
26 GND2
27 +5V2
28 DSW-DSK
29 (NC)
30 +5V2
CN-12
B30B-PHDSS-B
+24V1 1
+24V1 2
/T2PFC 3
/HPLS 4
+24V1 5
DVCH1 6
/HPFC 7
DVCH2 8
+24V1 9
DVCH3 10
/PSBC 11
DVCH4 12
+5V2 13
+24V1 14
PPD 15
TCS 16
GND2 17
GND2 18
+5V-MPRD1 19
TSGOUT 20
GND2 21
GND2 22
MPRD1 23
+5V2 24
+5V-MPRD2 25
HUS-DV 26
GND2 27
GND2 28
MPRD2 29
TH-DV 30
S5B-PH-K-S
GND2 1
+5V2 2
/MM 3
MMCLK 4
MM-T 5
CN-7
B32B-PHDSS-B
1 +24V1
2 +24V1
3 /CFM-DV
4 /RRC
5 GND2
6 (NC)
7 +24V1
8 +24V(DSW)
9 +5V-APPD1
10 PFD2
11 +5V-APPD2
12 /CFM-ADU
13 +5V-PFD2
14 THPS2
15 +5V-DSWD
16 TURM
17 +5V-AINPD
18 /TCBPWH
19 +5V-THPS1
20 (NC)
21 +5V-THPS2
22 /TCBIAS
23 /FBIAS
24 APPD1
25 DSWD
26 APPD2
27 /DGS
28 AINPD
29 GND2
30 GND2
31 (NC)
32 DSW-L
PHNR-02-H+BU02P-TR-P-H
1 +24V1 2
2 /RRC 1
CN-10
B26B-PHDSS-B
/POM1A 1
/POM1XA 2
/POM1B 3
/POM1XB 4
/POM2A 5
/POM2XA 6
/POM2B 7
/POM2XB 8
/ADM1A 9
/ADM1XA 10
/ADM1B 11
/ADM1XB 12
/ADM2A 13
/ADM2XA 14
/ADM2B 15
/ADM2XB 16
/TRMA 17
/TRMXA 18
/TRMB 19
/TRMXB 20
/VPMA 21
/VPMXA 22
/VPMB 23
/VPMXB 24
GND2 25
GND2 26
1 +24V1 1
2 /PSBC 2
3 +5V2 3
4 PPD 4
5 GND2 5
6 +5V-MPRD1 6
7 GND2 7
8 MPRD1 8
9 +5V-MPRD2 9
10 GND2 10
11 MPRD2 11
12 +24V1 12
13 /HPLS 13
14 (NC) 14
15 (NC) 15
16 (NC) 16
17 (NC) 17
18 (NC) 18
SMR-18V-N/SMP-18V-NC
PHNR-06-H+BU06P-1H-P-H
1 +24V1 6
2 /PSBC 5
3 +5V2 4
4 PPD 3
5 GND2 2
6 (NC) 1
PHNR-02-H+BU02P-TR-P-H
2 +24V1 1
1 /PSBC 2
179228-3
1 +5V2
2 PPD
3 GND2
SMR-08V-N/SMP-08V-NC
1 +5V-MPRD1 1
2 GND2 2
3 MPRD1 3
4 +5V-MPRD2 4
5 GND2 5
6 MPRD2 6
7 +24V1 7
8 /HPLS 8
PHR-3(RED)
1 +5V-MPRD1
2 GND2
3 MPRD1
PHR-3
1 +5V-MPRD2
2 GND2
3 MPRD2
DRIVER PWB
CN-4
B26B-PHDSS-B
1 /POM1A
2 /POM1XA
3 /POM1B
4 /POM1XB
5 /POM2A
6 /POM2XA
7 /POM2B
8 /POM2XB
9 /ADM1A
10 /ADM1XA
11 /ADM1B
12 /ADM1XB
13 /ADM2A
14 /ADM2XA
15 /ADM2B
16 /ADM2XB
17 /TRMA
18 /TRMXA
19 /TRMB
20 /TRMXB
21 /VPMA
22 /VPMXA
23 /VPMB
24 /VPMXB
25 GND2
26 GND2
CN-2
B12B-PH-K-S
/TRM-A 1
/TRMA 2
/TRMB 3
/TRM-B 4
+24V2 5
+24V2 6
/VPM-A 7
/VPMA 8
/VPMB 9
/VPM-B 10
+24V2 11
+24V2 12
SMR-06V-N/SMP-06V-NC
1 /TRM-A 1
2 /TRMA 2
3 /TRMB 3
4 /TRM-B 4
5 +24V2 5
6 +24V2 6
SMR-06V-N/SMP-06V-NC
1 /VPM-A 1
2 /VPMA 2
3 /VPMB 3
4 /VPM-B 4
5 +24V2 5
6 +24V2 6

▲: Feb. 6 2004

Code	Signal name	Name	Function/Operation	Type	Note
▲ MPRD1	MPRD1	Paper feed tray 2 paper pass detector 1	Manual feed/paper feed tray 2/LCC paper pass detection	Transmission type	Paper transport system sensor
▲ MPRD2	MPRD2	Paper feed tray 2 paper pass detector 2	Manual feed/paper feed tray 2/LCC paper pass detection	Transmission type	Paper transport system sensor
PPD	PPD	Resist roller front paper pass detector	Paper pass detection in front of resist roller	Reflection type	Paper transport system sensor
RRC	RRC	Resist roller clutch	Resist roller ON/OFF control	Electromagnetic clutch	
PSBC	PSBC	Resist roller brake clutch	Resist roller braking	Electromagnetic clutch	
MM	MM	Main motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.	DC brushless motor	Paper pass
TRM	TRM	Resist roller front drive motor	Drives the paper transport roller 15.	Stepping motor	Normal speed mode/ Resist roller front paper transport timing control (Warp amount control)
▲ VPM	VPM	Vertical paper transport motor	Drives the paper transport rollers 4 and 13.	Stepping motor	Normal speed mode

No.	Name	Function
1	Resist roller (Drive)	Transports paper to the transfer section. / Controls the transport timing of paper to adjust the relationship between images and paper.
2	Resist roller (Idle)	Applies a pressure to paper and the resist roller to provide transport power of the transport roller to paper.
3	Transport roller 15	Transports paper to the transport resist roller.

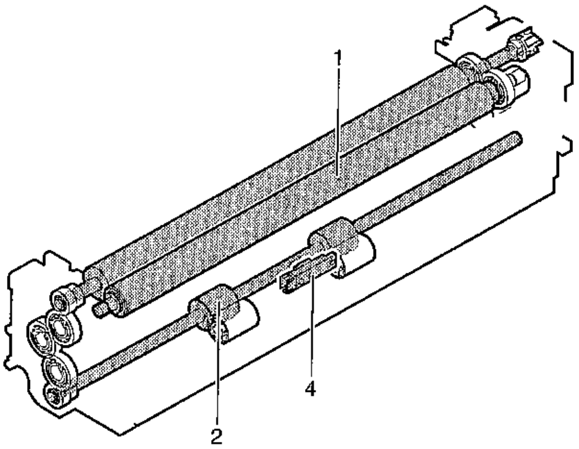
B. Maintenance and parts replacement

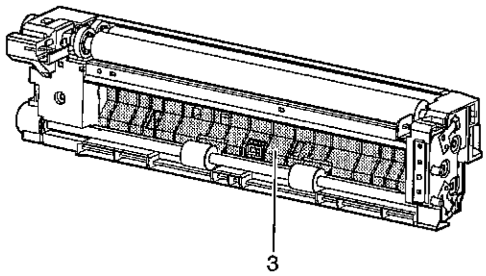
(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❑: Shift position

▲

Unit name	No.	Part name (AR-M550U/N (PM: 250K) / AR-M620U/N, AR-M700U/N (PM: 300K))	When calling	250K 300K	500K 600K	750K 900K	1000K 1200K	1250K 1500K	1500K 1800K	1750K 2100K	2000K 2400K	Remark
Vertical paper transport section 2	1	Resist roller (Idle)	×	○	○	○	○	○	○	○	○	
	2	Transport rollers	×	○	○	○	○	○	○	○	○	
	3	Transport paper guides	○	○	○	○	○	○	○	○	○	
▲	4	Sensors	○	○	○	○	○	○	○	○	○	Optical reflection sensor

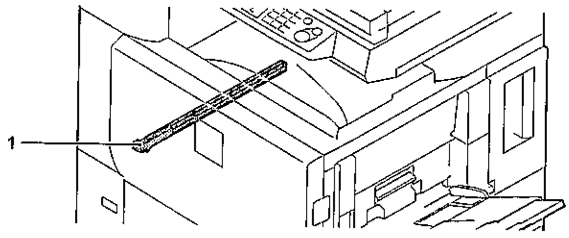




×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❑: Shift position

▲

Unit name	No.	Part name (AR-M550U/N (PM: 250K) / AR-M620U/N, AR-M700U/N (PM: 300K))	When calling	250K 300K	500K 600K	750K 900K	1000K 1200K	1250K 1500K	1500K 1800K	1750K 2100K	2000K 2400K	Remark
	1	Paper dust cleaner	×	▲	▲	▲	▲	▲	▲	▲	▲	

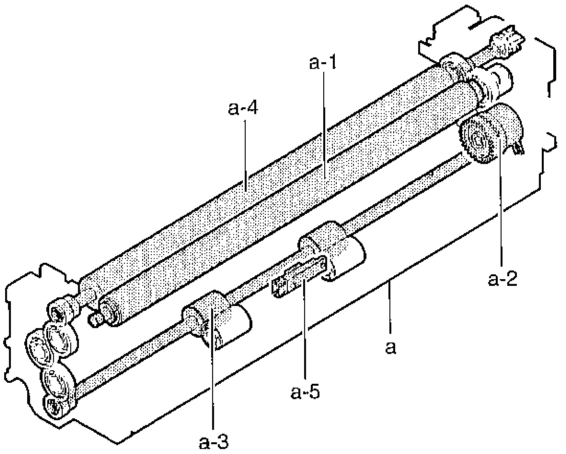


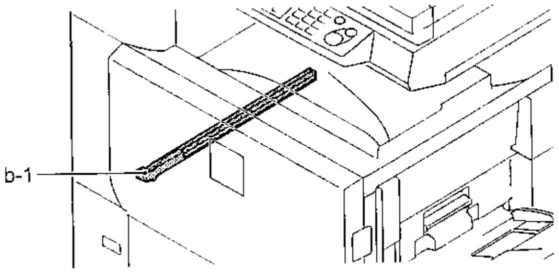
▲1 : Feb. 6 2004

(2) Maintenance and parts replacement

(List of Replacement Parts)

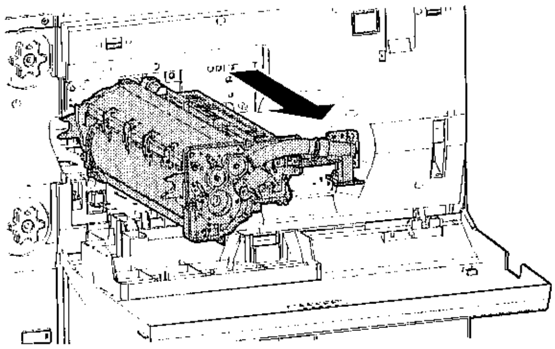
No.	Unit	Parts		
a	Resist roller unit	1	Resist roller (Idle)	×○
		2	Resis roller break clutch	×○
		3	Transport roller 15	×○
		4	Resist roller (Drive)	×○
		5	Resist roller front paper pass detector	×
▲1 b	Paper dust cleaner			×▲



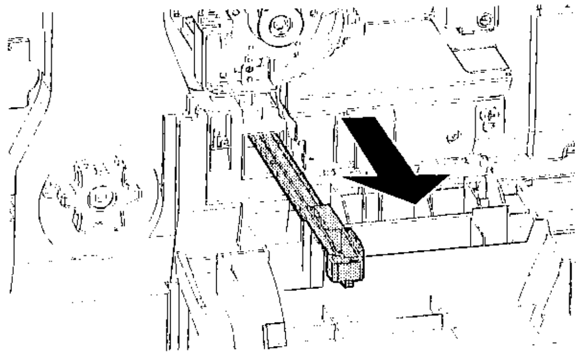


a. Resist roller unit

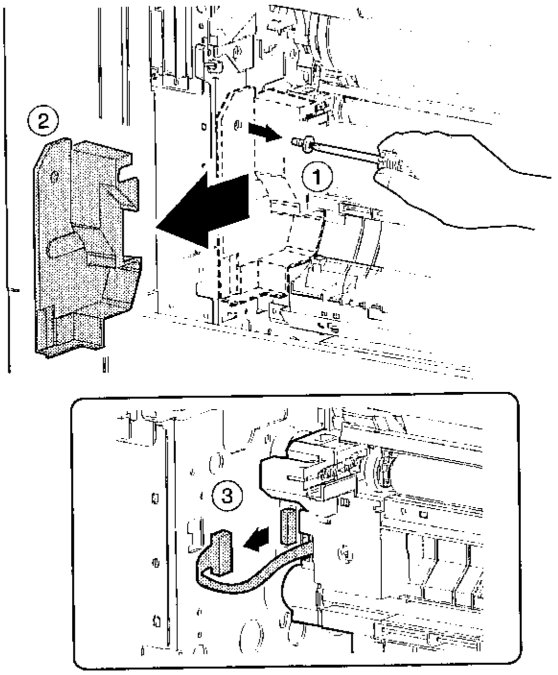
1) Open the front door, and open the process cover. Remove the process unit.



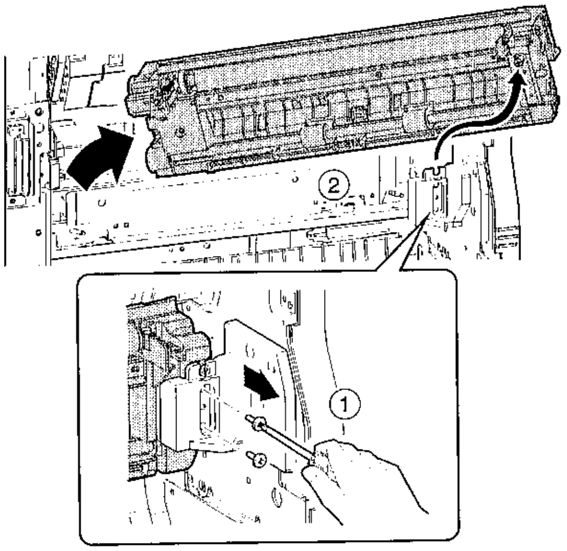
2) Remove the paper dust removing unit.



3) Remove the rear frame side cover, and disconnect the connector.

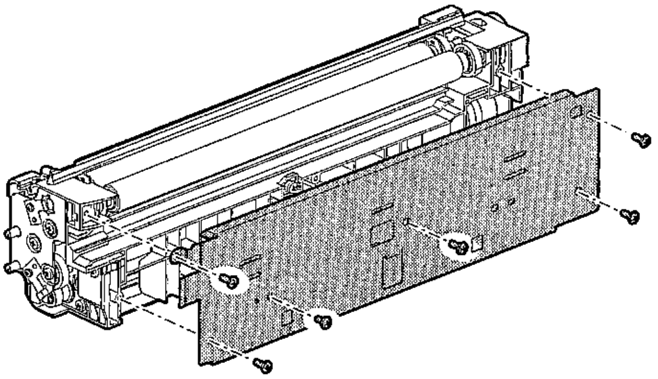


4) Remove the resist roller unit.

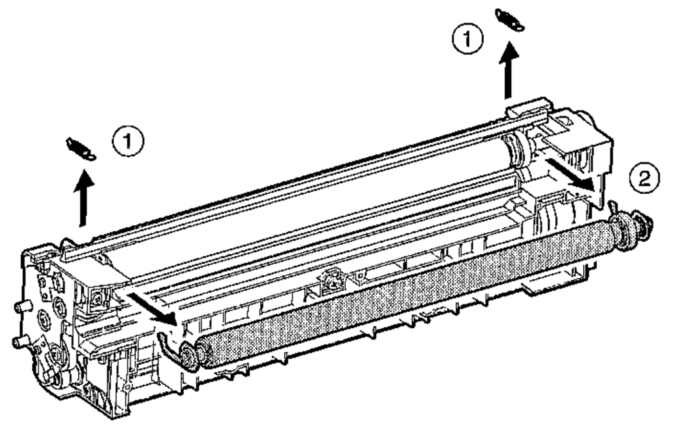


a-1. Resist roller (Idle)

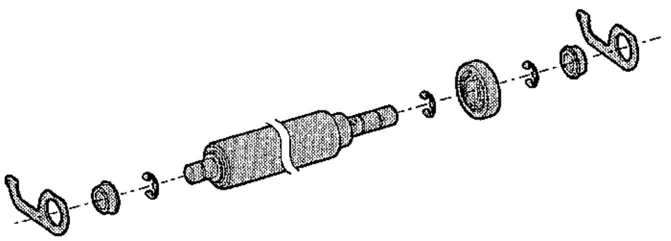
1) Remove the resist roller unit. (See "a. Resist roller unit" in this section)
2) Remove the cover.



3) Remove the follower roller tension spring.
4) Remove the resist roller (Idle) unit.

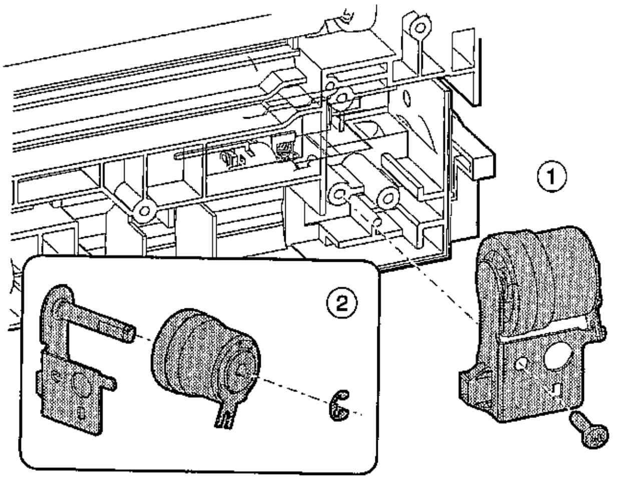


5) Remove the bearing, and remove the E-ring, the gear, and the pin.



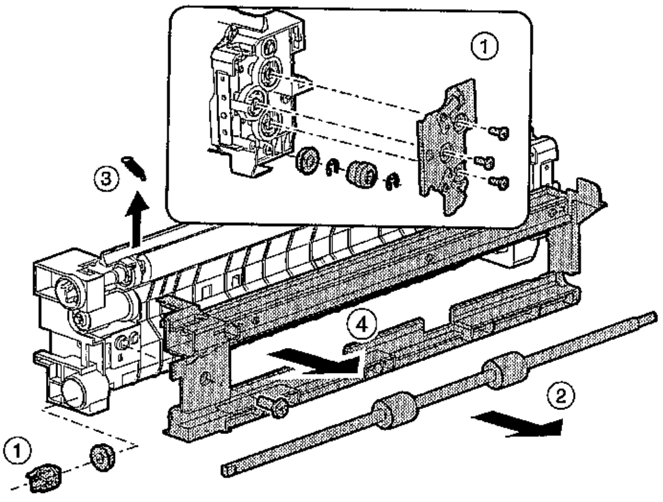
a-2. Resist roller break clutch

1) Remove the resist roller unit. (See "a. Resist roller unit" in this section)
2) Remove the cover. (See "a-1. Resist roller (Idle)" in this section)
3) Remove the resist roller break.
4) Remove the E-ring and the resist roller break clutch.



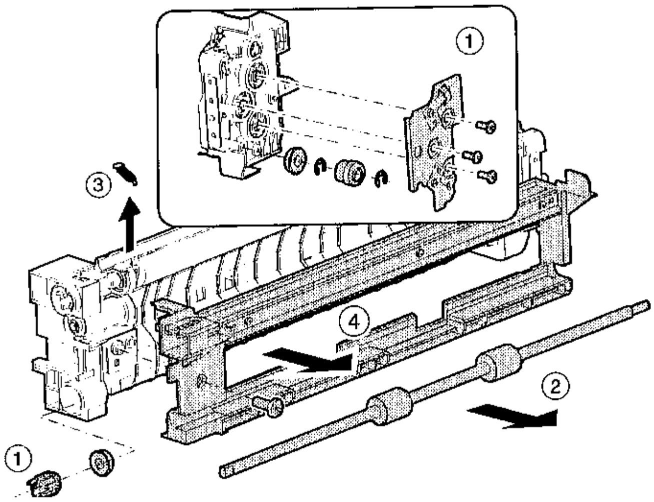
a-3. Transport roller 15

1) Remove the resist roller unit. (See "a. Resist roller unit" in this section)
2) Remove the front side cover.
3) Remove the E-ring, the gear, and the bearing.
4) Remove the coupling bearing on the rear side.
5) Remove the transport roller 15.

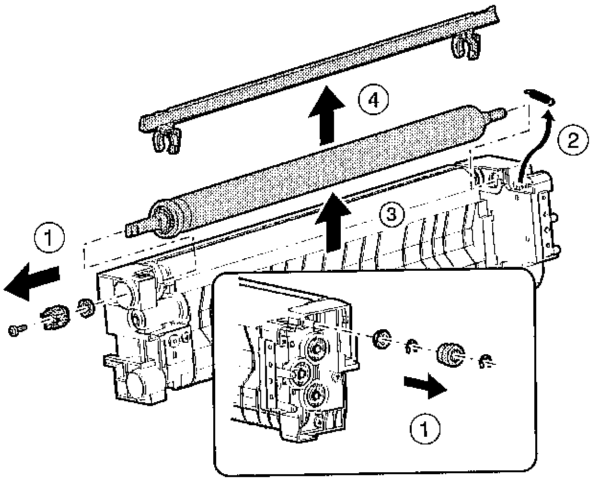


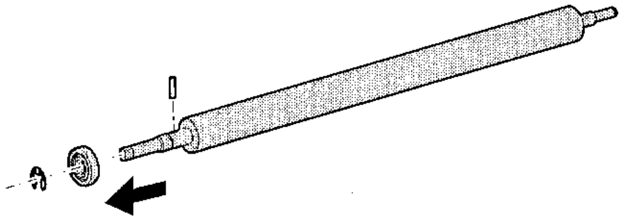
a-4. Resist roller (Drive)

1) Remove the resist roller unit. (See "a. Resist roller unit" in this section)
2) Remove the follower roller and the tension spring.
3) Remove the cover on the front side.
4) Remove the transport roller 15.
5) Remove the paper guide.



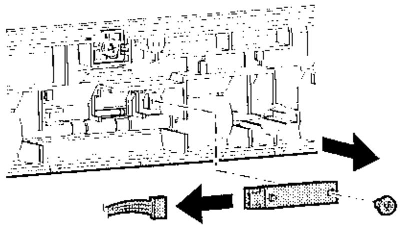
6) Remove the E-ring, the gear, and the bearing.
7) Remove the coupling on the rear side.
8) Remove the resist roller (Drive).





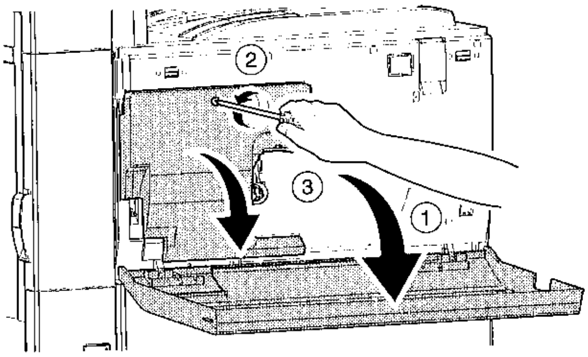
a-5. Resist roller front paper pass detector

1) Remove the resist roller unit. (See "a. Resist roller unit" in this section)
2) Remove the cover. (See "a-1. Resist roller (Idle)" in this section)
3) Remove the sensor.

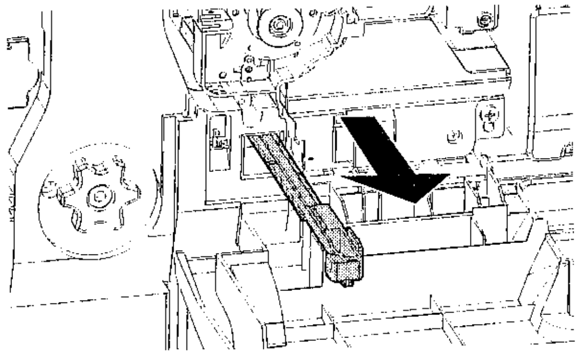


b. Paper dust cleaner

1) Open the front cabinet. Open the process DV cover.



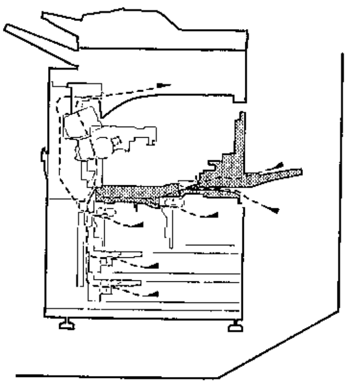
2) Remove the paper dust cleaner.

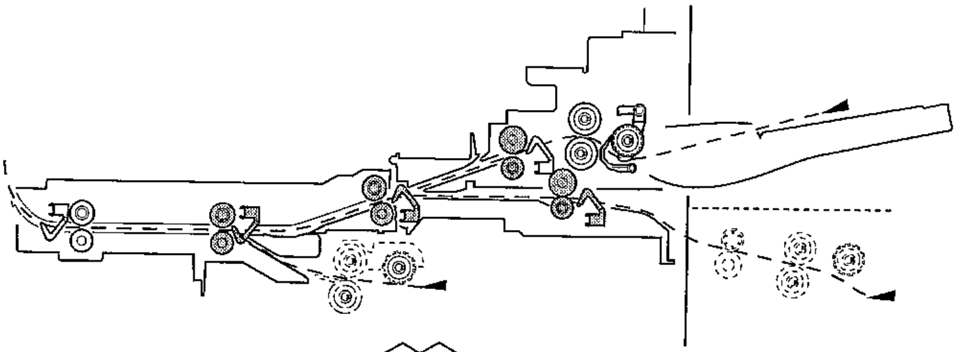


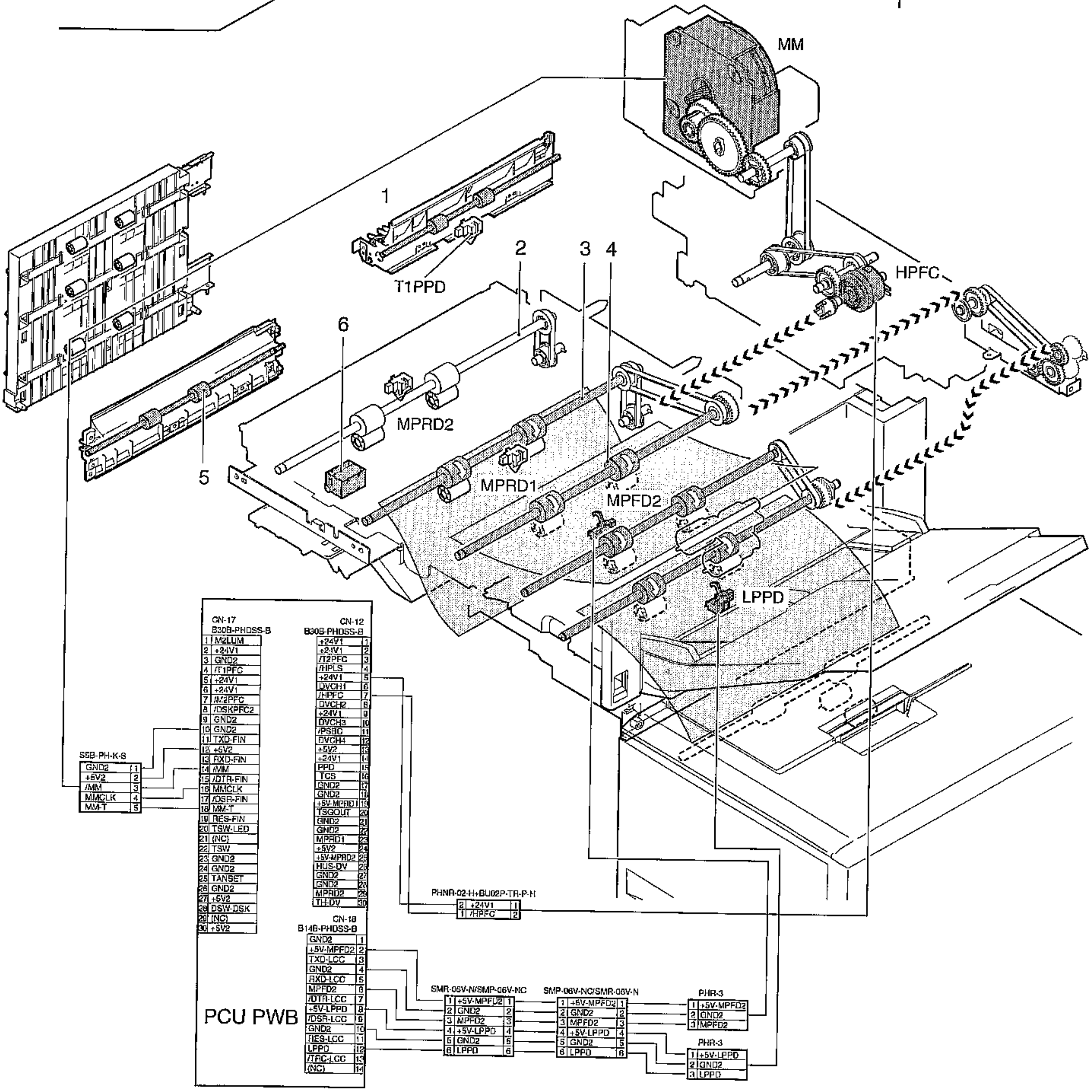
⚠ : Feb. 6 2004

(Horizontal transport section)

A. Major parts and signal functions






MM
1
T1PPD
2
3
4
HPFC
6
MPRD2
5
MPRD1
MPFD2
LPPD
CN-17
B30B-PHDSS-B
1 M2LUM
2 +24V1
3 GND2
4 /T1PFC
5 +24V1
6 +24V1
7 /M2PFC
8 /DSKPFC2
9 GND2
10 GND2
11 TXD-FIN
12 +5V2
13 RXD-FIN
14 /MM
15 /DTR-FIN
16 MMCLK
17 /DSR-FIN
18 MM-T
19 RES-FIN
20 TSW-LED
21 (NC)
22 TSW
23 GND2
24 GND2
25 TANSET
26 GND2
27 +5V2
28 DSW-DSK
29 (NC)
30 +5V2
CN-12
B30B-PHDSS-B
+24V1 1
+24V1 2
/T2PFC 3
/HPLS 4
+24V1 5
DVCH1 6
/HPFC 7
DVCH2 8
+24V1 9
DVCH3 10
/PSBC 11
DVCH4 12
+5V2 13
+24V1 14
PPD 15
TCS 16
GND2 17
GND2 18
+5V-MPRD1 19
TSGOUT 20
GND2 21
GND2 22
MPRD1 23
+5V2 24
+5V-MPRD2 25
HUS-DV 26
GND2 27
GND2 28
MPRD2 29
TH-DV 30
S5B-PH-K-S
GND2 1
+5V2 2
/MM 3
MMCLK 4
MM-T 5
CN-18
B14B-PHDSS-B
GND2 1
+5V-MPFD2 2
TXD-LCC 3
GND2 4
RXD-LCC 5
MPFD2 6
/DTR-LCC 7
+5V-LPPD 8
/DSR-LCC 9
GND2 10
RES-LCC 11
LPPD 12
/TRC-LCC 13
(NC) 14
PCU PWB
PHNR-02-H+BU02P-TR-P-H
2 +24V1 1
1 /HPFC 2
SMR-06V-N/SMP-06V-NC
1 +5V-MPFD2 1
2 GND2 2
3 MPFD2 3
4 +5V-LPPD 4
5 GND2 5
6 LPPD 6
SMP-06V-NC/SMR-06V-N
1 +5V-MPFD2 1
2 GND2 2
3 MPFD2 3
4 +5V-LPPD 4
5 GND2 5
6 LPPD 6
PHR-3
1 +5V-MPFD2
2 GND2
3 MPFD2
PHR-3
1 +5V-LPPD
2 GND2
3 LPPD

	Code	Signal name	Name	Function/Operation	Type	Note
⚠	LPPD	LPPD	LCC unit paper pass detector	Paper feed tray No. 5 paper feed (Side LCC) unit paper pass detector	Transmission type	Paper transport system sensor

▲1: Feb. 6 2004

Code	Signal name	Name	Function/Operation	Type	Note
▲ MPFD2	MPFD2	Manual feed paper pass detector 2	Manual tray and LCC unit paper pass detection	Transmission type	Paper transport system sensor
MM	MM	Main motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.	DC brushless motor	Paper pass
▲1 HPFC	HPFC	Horizontal paper transport clutch	Manual paper feed, paper feed tray 2 section, LCC paper transport roller ON/OFF control	Electromagnetic clutch	
▲1 MPRD1	MPRD1	Paper feed tray 2 paper pass detector 1	Manual feed/paper feed tray 2, LCC paper pass detection	Transmission type	Paper transport system sensor
▲1 MPRD2	MPRD2	Paper feed tray 2 paper pass detector 2	Manual feed/paper feed tray 2, LCC paper pass detection	Transmission type	Paper transport system sensor
T1PPD	T1PPD	Manual feed paper pass detector (Paper feed tray 1)	Paper feed tray 1 paper pass detection	Transmission type	Paper transport system sensor

No.	Name	Function
1	Transport roller 15	Transports paper to the transport resist roller.
2	Transport roller 4	Transports paper from the transport roller 3 to the transport roller 15.
3	Transport roller 3	Transports paper from the paper feed tray 2 and the transport roller 2 to the transport roller 3.
4	Transport roller 2	Transports paper from the manual paper feed and transport roller 2 to the transport roller 3.
5	Transport roller 13	Transports to the transport roller 15.
6	Paper guide lock solenoid	Lock the horizontal transport paper guide.

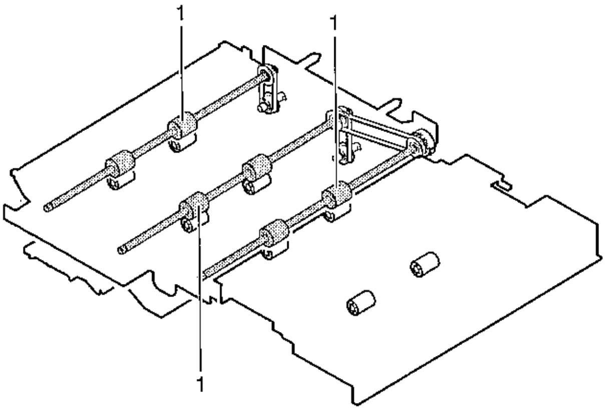
B. Maintenance and parts replacement

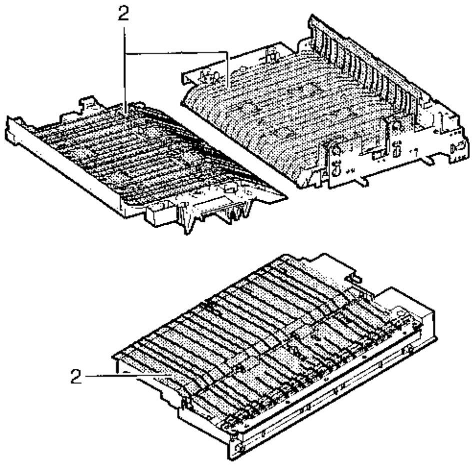
(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❑: Shift position

▲1

		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N, AR-M700U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Vertical paper transport	1	Transport rollers	×	○	○	○	○	○	○	○	○	
	2	Transport paper guides	○	○	○	○	○	○	○	○	○	

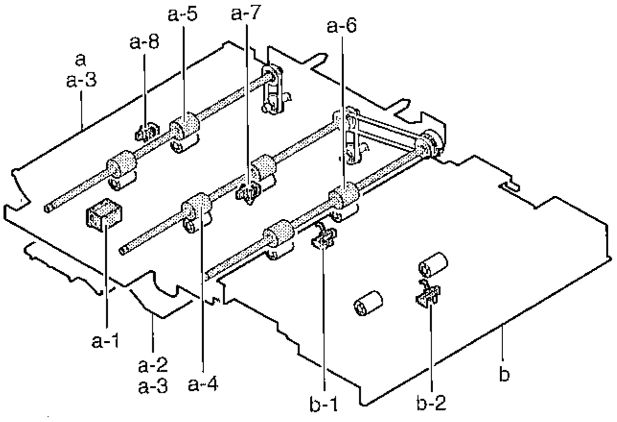




(2) Maintenance and parts replacement

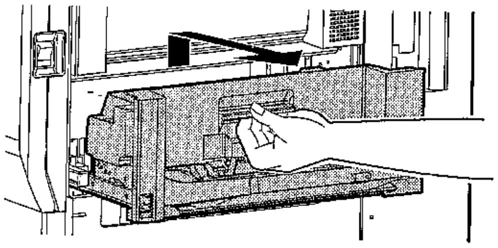
(List of Replacement Parts)

No.	Unit		Parts	
a	Relay pass unit	1	Paper guide lock solenoid	
		2	Lower paper guide unit	○
		3	Paper guides	○
		4	Transport roller 3 (Drive)	×○
		5	Transport roller 4 (Drive)	×○
		6	Transport roller 2 (Drive)	×○
		7	Paper feed tray 2 paper pass detector 1	
		8	Paper feed tray 2 paper pass detector 2	
b	No. 5 paper feed relay unit	1	Manual paper pass detector 2	
		2	No. 5 paper feed paper pass detector	

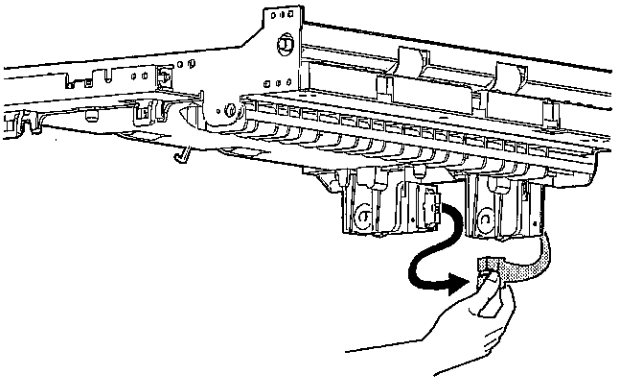


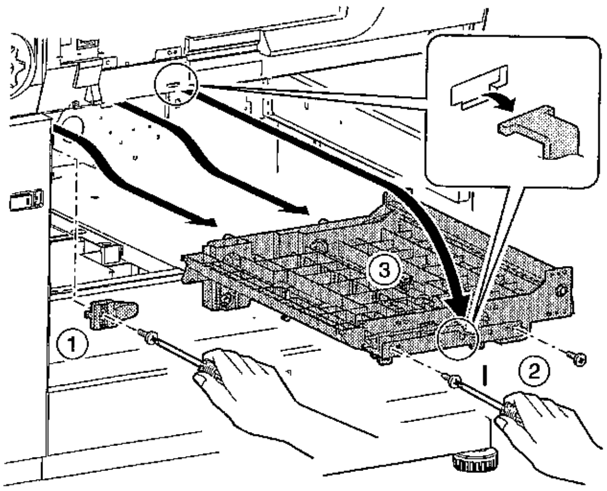
a. Relay pass unit

1) Pull out the multi manual paper feed tray unit.



2) Remove the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2" in "(Paper feed tray sections 1 and 2)"
3) Remove the toner cartridge, the OPC drum, and the toner hopper, and remove the front door.
4) Remove the parts.

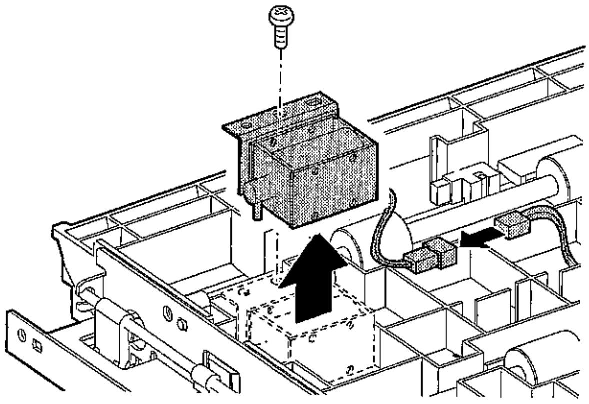




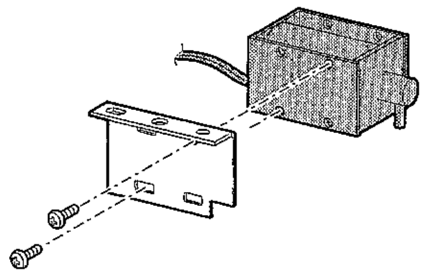
5) Disconnect the connector, and remove the relay pass unit.

a-1. Paper guide lock solenoid

1) Remove the relay pass unit. (See "a. Relay pass unit" in this section)
2) Disconnect the connector, and remove the paper guide lock solenoid unit.

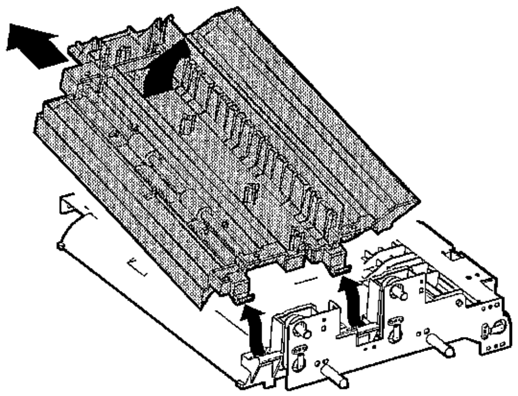


3) Remove the paper guide lock solenoid.



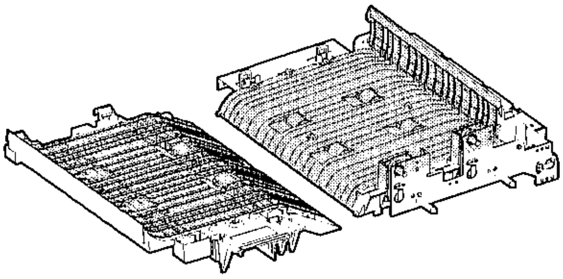
a-2. Lower paper guide unit

1) Remove the relay pass unit. (See "a. Relay pass unit" in this section)
2) Remove the metal fixture.
3) Remove the lower paper guide unit.



a-3. Paper guides

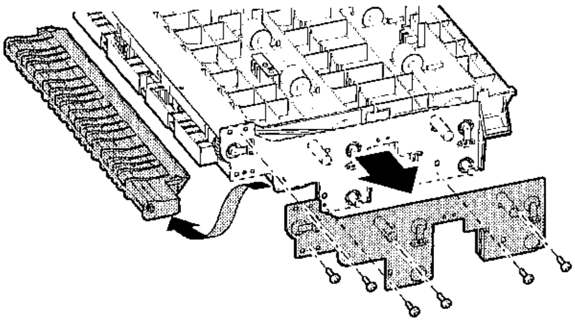
1) Remove the relay pass unit. (See "a. Relay pass unit" in this section)
2) Remove the lower paper guide unit. (See "a-2. Lower paper guide unit" in this section)
3) Clean the paper guides.



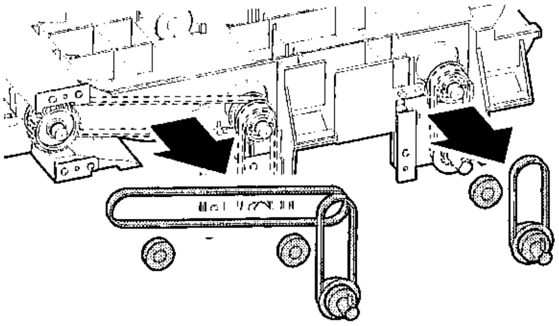
a-4. Transport roller 3 (Drive)

a-5. Transport roller 4 (Drive)

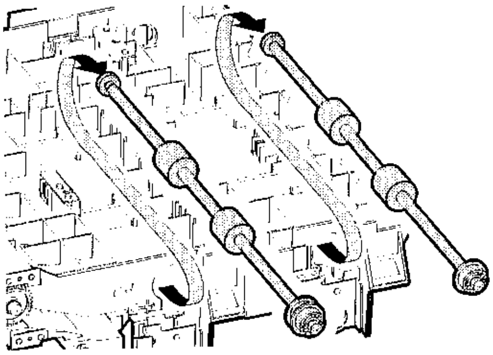
1) Remove the relay pass unit. (See "a. Relay pass unit" in this section)
2) Remove lower paper guide unit. (See "a-2. Lower paper guide unit" in this section)
3) Remove the rear positioning plate, and remove the paper feed port PG of the paper feed tray 1 and 2.



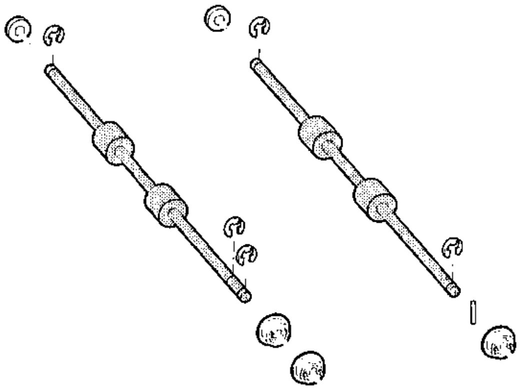
4) Remove the bearing, the belt, and the relay pass drive shaft unit.



5) Remove the transport roller 3 and 4 (Drive).

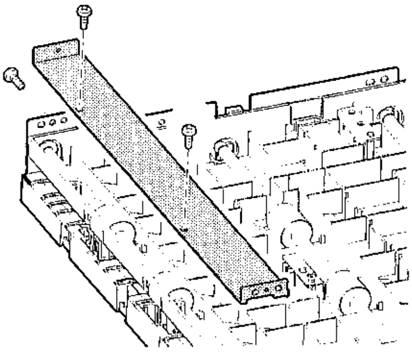


6) Remove the E-ring from transport roller 3 and 4 (Drive), and remove the belt pulley.

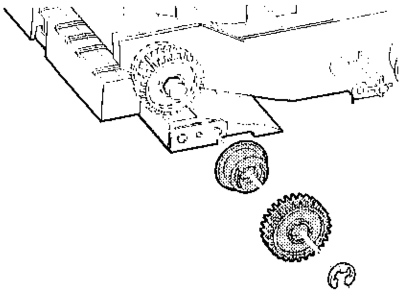


a-6. Transport roller 2 (Drive)

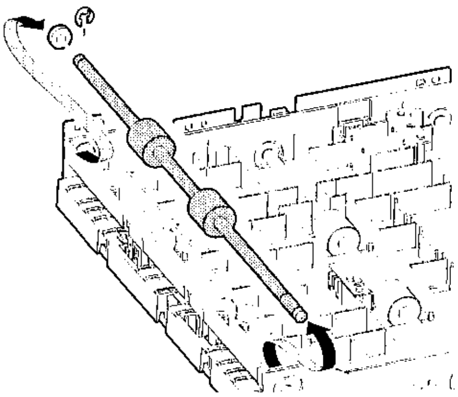
1) Remove the relay pass unit. (See "a. Relay pass unit" in this section)
2) Remove the lower paper guide unit. (See "a-2. Lower paper guide unit" in this section)
3) Remove the rear positioning plate, and remove the paper feed PG of the paper feed tray 1/2. (See "a-4. Transport roller 3 (Drive)" in this section)
4) Remove the paper entry side upper plate.



5) Remove the E-ring, and remove the gear and the belt pulley.



6) Remove the transport roller 2 (Drive) unit.
7) Remove the E-ring from the transport roller 2 (Drive).

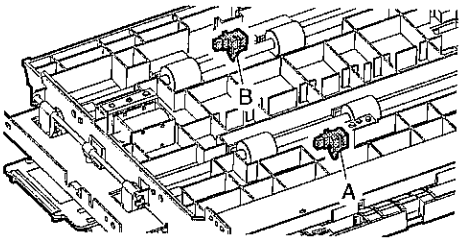


▲ : Feb. 6 2004

a-7. Paper feed tray 2 paper pass detector 1

a-8. Paper feed tray 2 paper pass detector 2

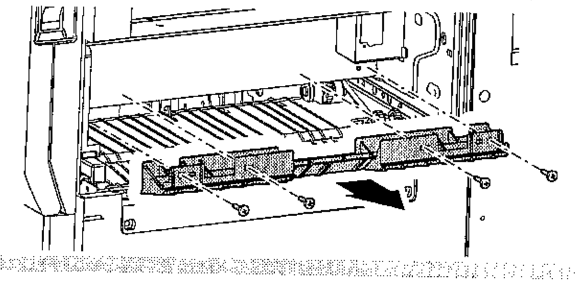
1) Remove the relay pass unit.
2) Check the paper feed tray 2 paper pass detector 1 (A) and the paper feed tray 2 paper pass detector 2 (B).

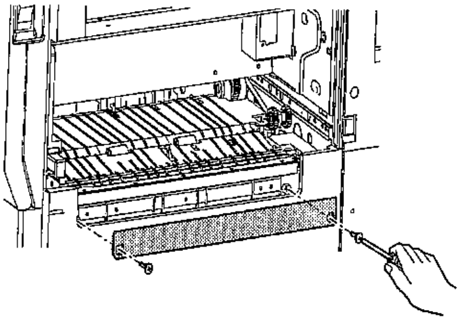


b. No. 5 paper feed relay unit

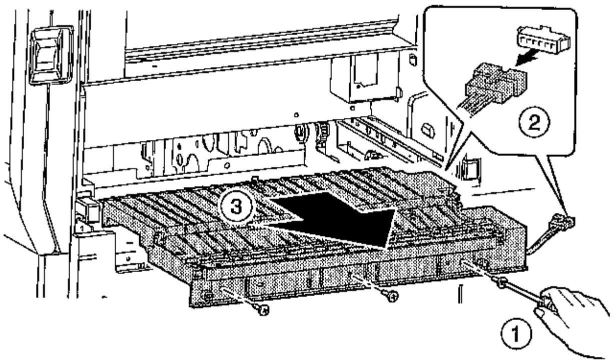
1) Remove the multi paper feed unit.

▲ 2) Remove the manual feed relay paper guide upper.





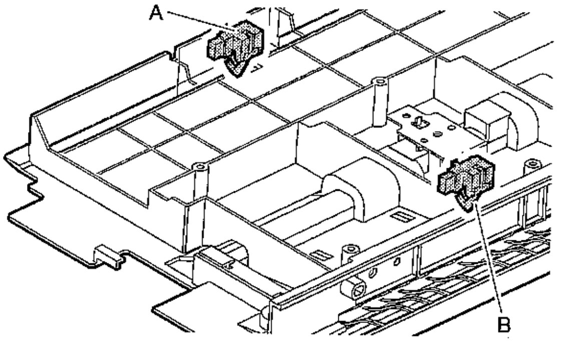
3) Lift the No. 5 paper feed relay unit, and remove the connector.
4) Remove the No. 5 paper feed relay unit.



b-1. Manual paper pass detector 2

b-2. No. 5 paper feed paper pass detector

1) Remove the multi manual paper feed unit.
2) Remove the No. 5 paper feed unit.
3) Check the manual paper pass detector 2 (A) and the No. 5 paper feed paper pass detector (B).



▲ : Feb. 6 2004

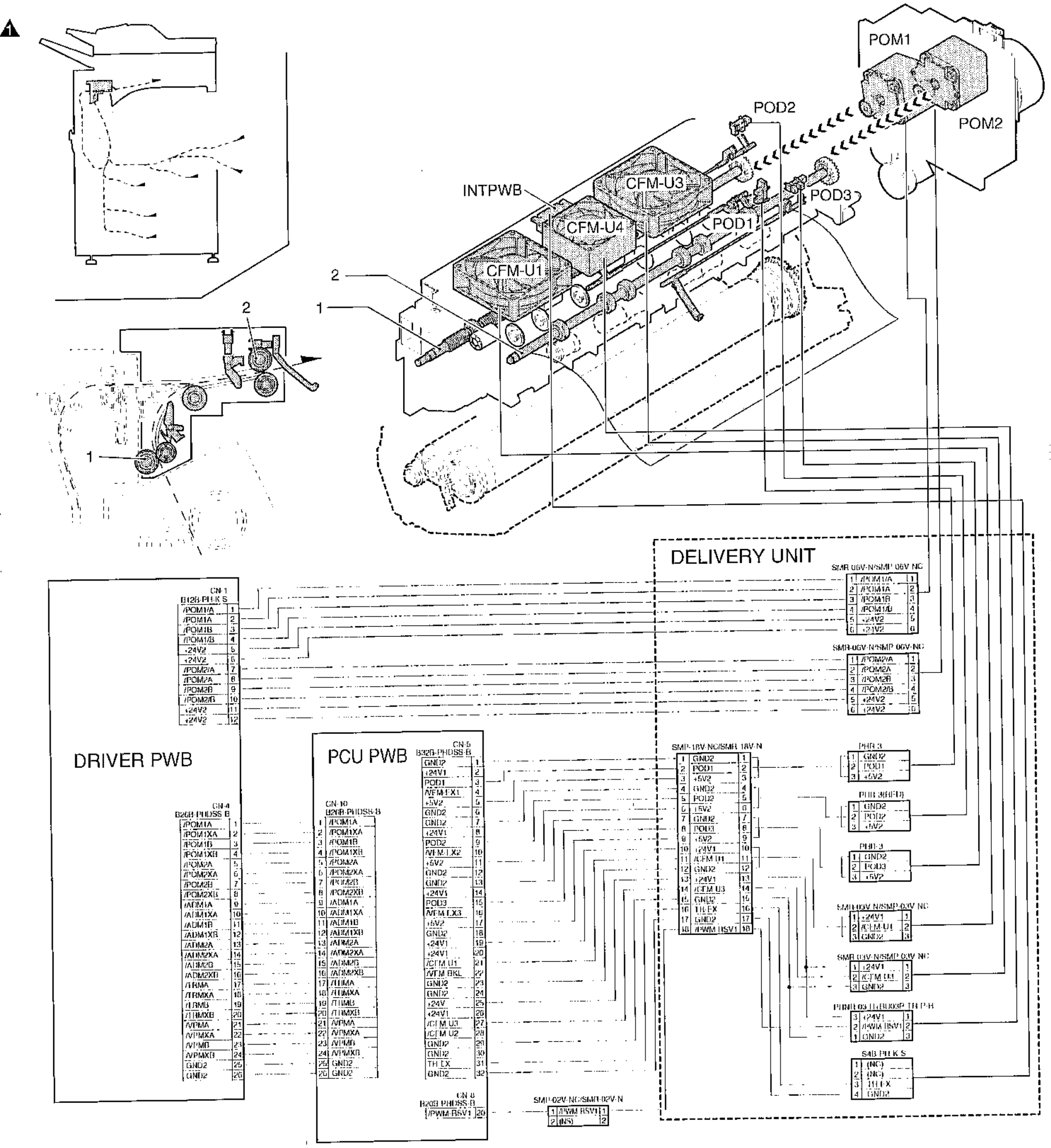
[Paper exit and turning section]

A. Outline

▲ The paper exit and turning section discharges paper which is transported from the fusing section, and detects paper full. It also turns paper to transport it to the duplex or the finisher.

B. Major parts and signal functions

▲



POM1
POM2
POD2
POD3
POD1
INTPWB
CFM-U3
CFM-U4
CFM-U1
2
1
DELIVERY UNIT
DRIVER PWB
CN-1
B12B-PH-K-S
/POM1/A 1
/POM1A 2
/POM1B 3
/POM1/B 4
+24V2 5
+24V2 6
/POM2/A 7
/POM2A 8
/POM2B 9
/POM2/B 10
+24V2 11
+24V2 12
CN-4
B26B-PHDSS-B
/POM1A 1
/POM1XA 2
/POM1B 3
/POM1XB 4
/POM2A 5
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/POM2B 7
/POM2XB 8
/ADM1A 9
/ADM1XA 10
/ADM1B 11
/ADM1XB 12
/ADM2A 13
/ADM2XA 14
/ADM2B 15
/ADM2XB 16
/TRMA 17
/TRMXA 18
/TRMB 19
/TRMXB 20
/VPMA 21
/VPMXA 22
/VPMB 23
/VPMXB 24
GND2 25
GND2 26
PCU PWB
CN-10
B26B-PHDSS-B
1 /POM1A
2 /POM1XA
3 /POM1B
4 /POM1XB
5 /POM2A
6 /POM2XA
7 /POM2B
8 /POM2XB
9 /ADM1A
10 /ADM1XA
11 /ADM1B
12 /ADM1XB
13 /ADM2A
14 /ADM2XA
15 /ADM2B
16 /ADM2XB
17 /TRMA
18 /TRMXA
19 /TRMB
20 /TRMXB
21 /VPMA
22 /VPMXA
23 /VPMB
24 /VPMXB
25 GND2
26 GND2
CN-5
B32B-PHDSS-B
GND2 1
+24V1 2
POD1 3
/VFM-EX1 4
+5V2 5
GND2 6
GND2 7
+24V1 8
POD2 9
/VFM-EX2 10
+5V2 11
GND2 12
GND2 13
+24V1 14
POD3 15
/VFM-EX3 16
+5V2 17
GND2 18
+24V1 19
+24V1 20
/CFM-U1 21
/VFM-BKL 22
GND2 23
GND2 24
+24V 25
+24V1 26
/CFM-U3 27
/CFM-U2 28
GND2 29
GND2 30
TH-EX 31
GND2 32
CN-8
B20B-PHDSS-B
/PWM-BSV1 20
SMP-02V-NC/SMR-02V-N
1 /PWM-BSV1 1
2 (NS) 2
SMR-06V-N/SMP-06V-NC
1 /POM1/A 1
2 /POM1A 2
3 /POM1B 3
4 /POM1/B 4
5 +24V2 5
6 +24V2 6
SMR-06V-N/SMP-06V-NC
1 /POM2/A 1
2 /POM2A 2
3 /POM2B 3
4 /POM2/B 4
5 +24V2 5
6 +24V2 6
SMP-18V-NC/SMR-18V-N
1 GND2 1
2 POD1 2
3 +5V2 3
4 GND2 4
5 POD2 5
6 +5V2 6
7 GND2 7
8 POD3 8
9 +5V2 9
10 +24V1 10
11 /CFM-U1 11
12 GND2 12
13 +24V1 13
14 /CFM-U3 14
15 GND2 15
16 TH-EX 16
17 GND2 17
18 /PWM-BSV1 18
PHR-3
1 GND2
2 POD1
3 +5V2
PHR-3(RED)
1 GND2
2 POD2
3 +5V2
PHR-3
1 GND2
2 POD3
3 +5V2
SMR-03V-N/SMP-03V-NC
1 +24V1 1
2 /CFM-U1 2
3 GND2 3
SMR-03V-N/SMP-03V-NC
1 +24V1 1
2 /CFM-U3 2
3 GND2 3
PHNR-03-H/B03P-TR-P-H
3 +24V1 1
2 /PWM-BSV1 2
1 GND2 3
S4B-PH-K-S
1 (NC)
2 (NC)
3 TH-EX
4 GND2

▲ : Feb. 6 2004

Code	Signal name	Name	Function/Operation	Type	Note
POD1	POD1	Paper exit detector 1	Paper exit detection from fusing	Transmission type	Paper transport system sensor
POD2	POD2	Paper exit detector 2	Paper pass detection from paper exit	Transmission type	Paper transport system sensor
POD3	POD3	Paper exit detector 3	Paper exit detection to upper section paper exit tray (Full detection)	Transmission type	Paper transport system sensor
POM1	POM1	Paper exit motor 1	Drives the paper transport roller 16.	Stepping motor	Selection of Normal speed/ High speed
POM2	POM2	Paper exit motor 2	Drives the paper exit roller 1.	Stepping motor	Selection of Normal speed/ High speed/ Reverse rotation
▲ CFM-U1	CFM-U1	Fusing cooling fan motor 1 (Paper exit, duplex (ADU) section) (Front surface)	Discharges heat generated in the fusing section.	DC brushless motor	PWM control
▲ CFM-U3	CFM-U3	Fusing cooling fan motor 3 (Paper exit, duplex (ADU) section) (Front surface)	Discharges heat generated in the fusing section.	DC brushless motor	PWM control
▲ CFM-U4	PWM-RSV1	Fusing cooling fan motor 4 (Paper exit, duplex (ADU) section) (Paper exit section rear side)	Cools paper which is discharged to the inner tray.	DC brushless motor	PWM control
INTPWB		Paper exit temperature sensor	Paper exit section temperature detection		

No.	Name	Function
1	Transport roller 16	Transports paper from the fusing roller to the paper exit roller 1.
2	Paper exit roller 1	Discharges paper to the paper exit tray. / Switchbacks paper.

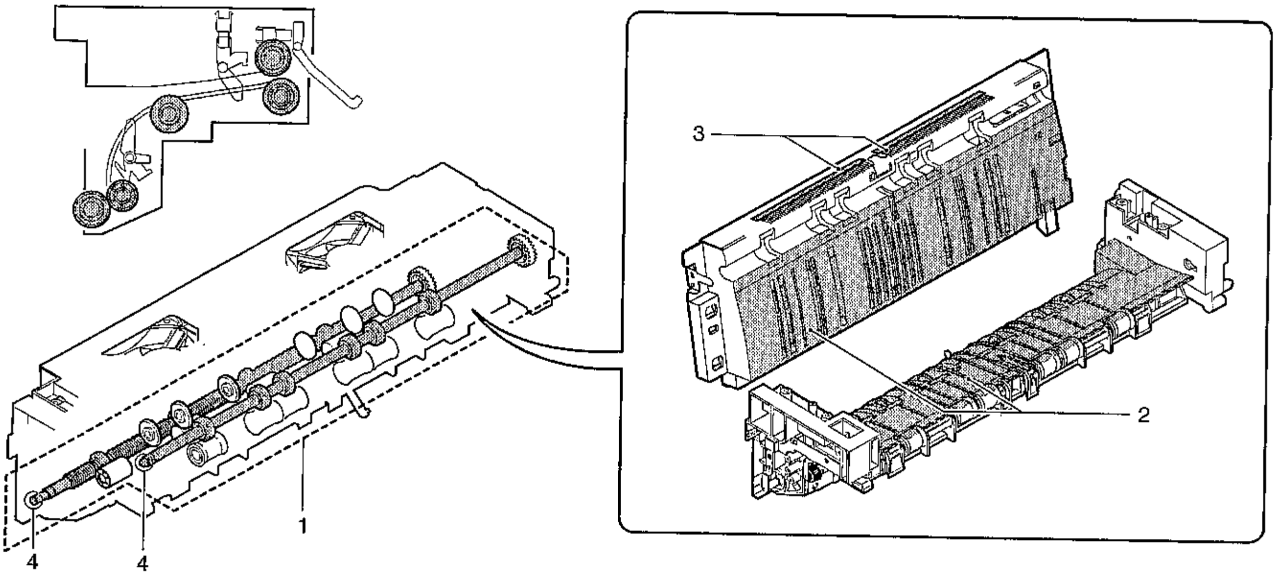
C. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift position

▲

		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N, AR-M700U/N (PM: 300K)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Paper exit reverse section	1	Transport rollers	×	○	○	○	○	○	○	○	○	
	2	Transport paper guides	○	○	○	○	○	○	○	○	○	
	3	Discharge brush	×	×	×	×	×	×	×	×	×	
	4	Shaft (Conduction grease)										UKOG-0012QSZZ

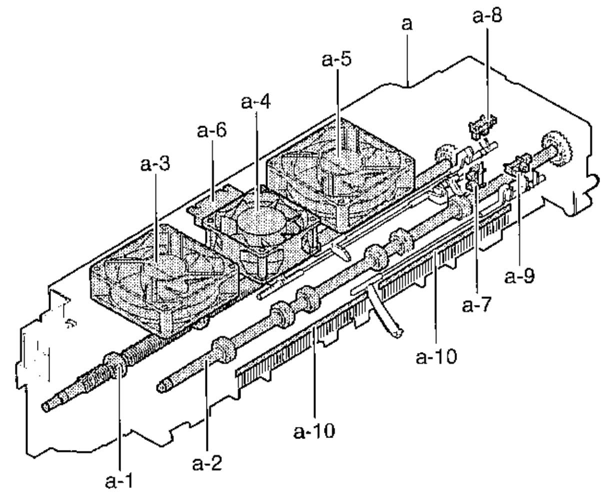


▲ : Feb. 6 2004

(2) Maintenance and parts replacement

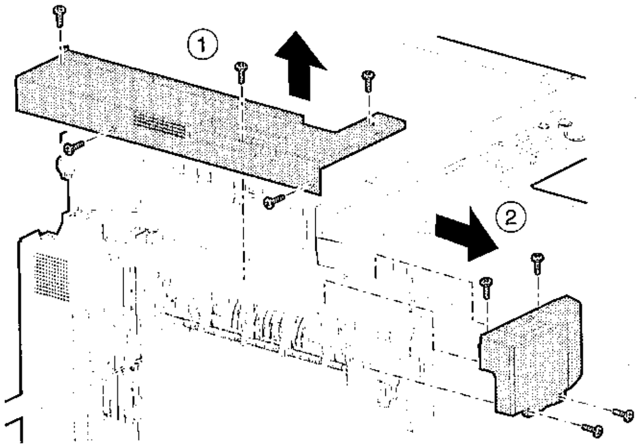
(List of Replacement Parts)

No.	Unit	Parts		
a	Paper exit unit	1	Transport roller 16	○×
		2	Paper exit roller 1	○×
		3	Fusing cooling fan motor 1	
		4	Fusing cooling fan motor 3	
		5	Fusing cooling fan motor 4	
		6	Paper exit temperature sensor	
		7	Paper exit detector 1	
		8	Paper exit detector 2	
		9	Paper exit detector 3	
		10	Discharge brush	×

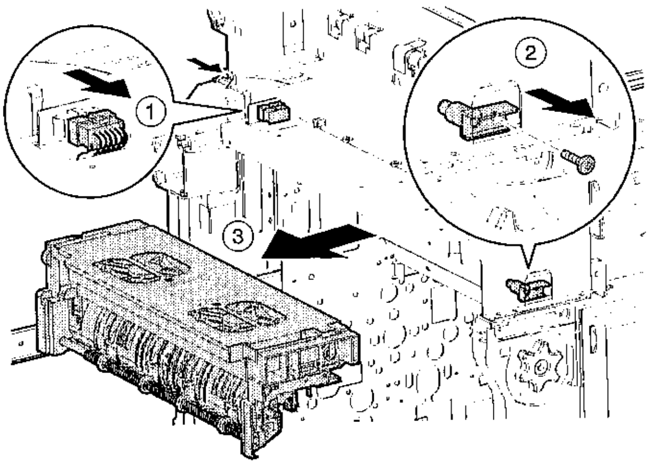


a. Paper exit unit

1) Open the left door.
2) Remove the SPF paper exit tray.
3) Remove the top left cabinet.
4) Remove the front left cabinet.

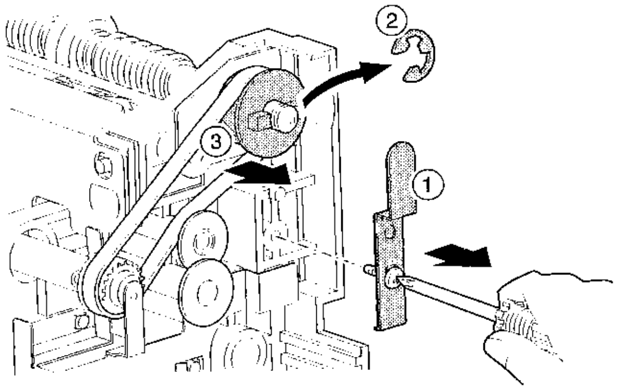


5) Disconnect the connectors.
6) Remove the front fixing bracket.
7) Remove the paper exit unit in the arrowed direction.

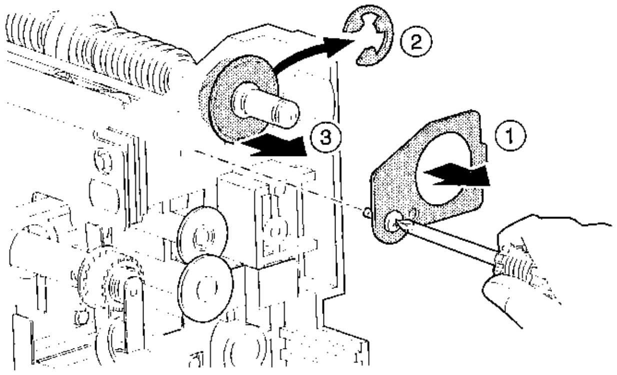


a-1. Transport roller 16

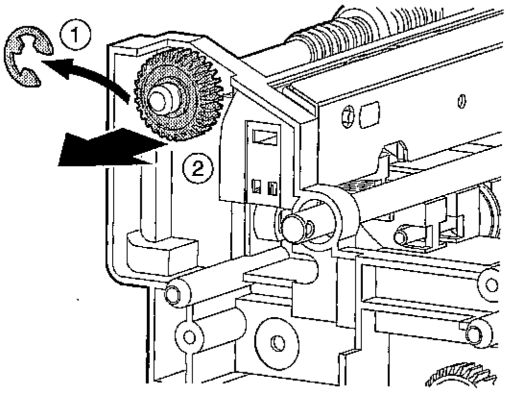
1) Remove the paper exit unit. (See "a. Paper exit unit" in this section)
2) Remove the ground plate. Remove the E-ring to remove the pulley.



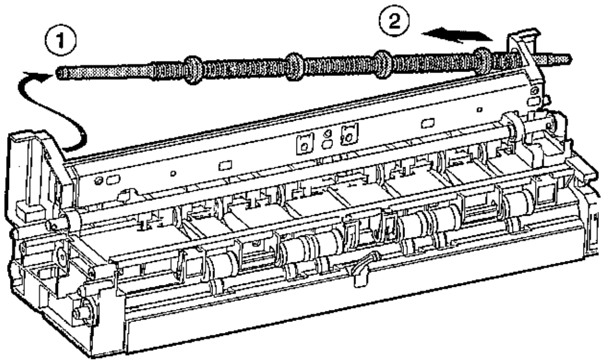
3) Remove the stopper. Remove the E-ring to remove the bearing.



4) Remove the E-ring to remove the gear.

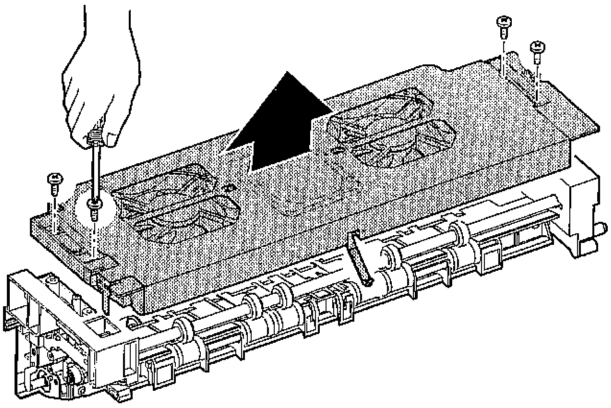


5) Remove the transport roller in the arrowed direction.

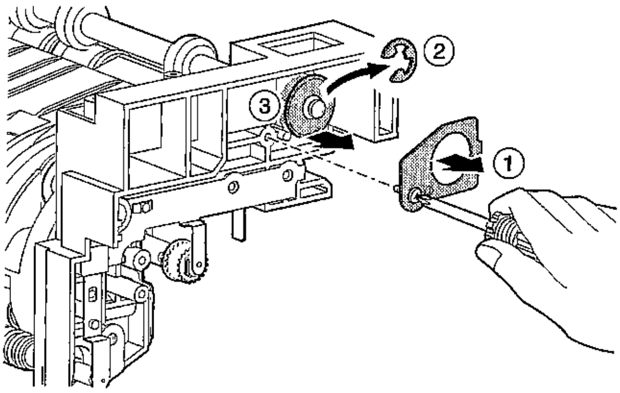


a-2. Paper exit roller 1

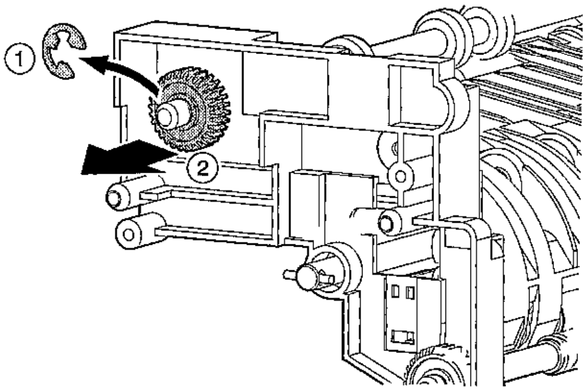
1) Remove the paper exit unit. (See "a. Paper exit unit" in this section)
2) Remove the upper unit.



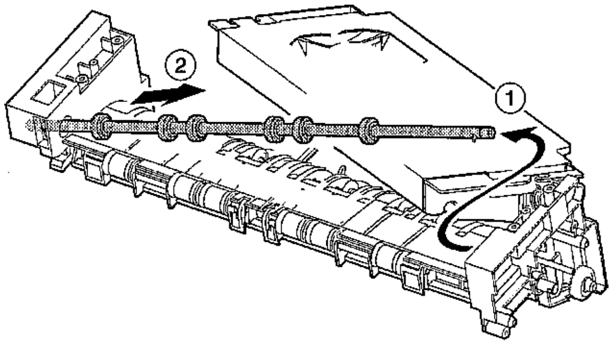
3) Remove the stopper. Remove the E-ring to remove the bearing.



4) Remove the E-ring to remove the gear.



5) Remove the paper exit roller 1 in the arrowed direction.

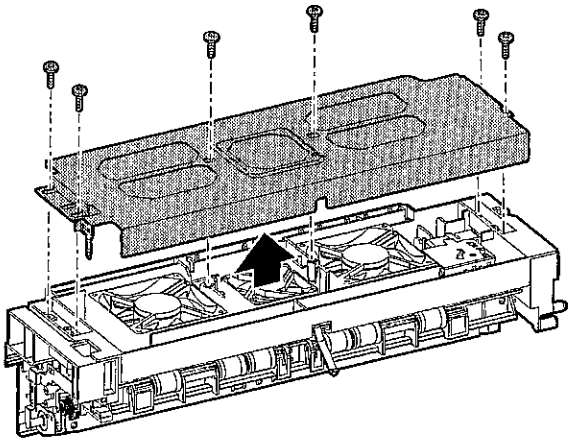


a-3. Fusing cooling fan motor 1

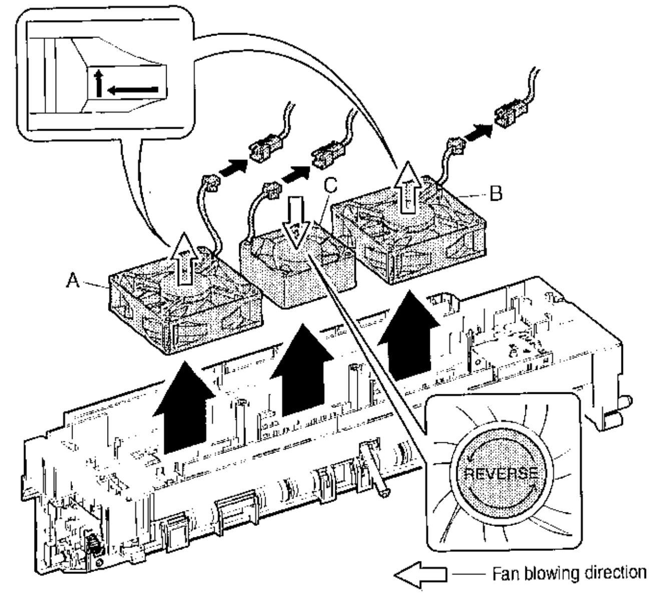
a-4. Fusing cooling fan motor 3

a-5. Fusing cooling fan motor 4

1) Remove the paper exit unit. (See "a. Paper exit unit" in this section)
2) Remove the upper cover.



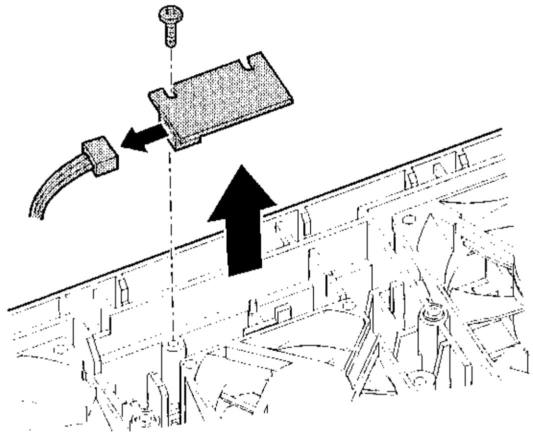
3) Remove the fusing cooling fan motor 1 (A), 3 (B), and 4 (C).



NOTE: When assembling, be careful of the direction of the fan.

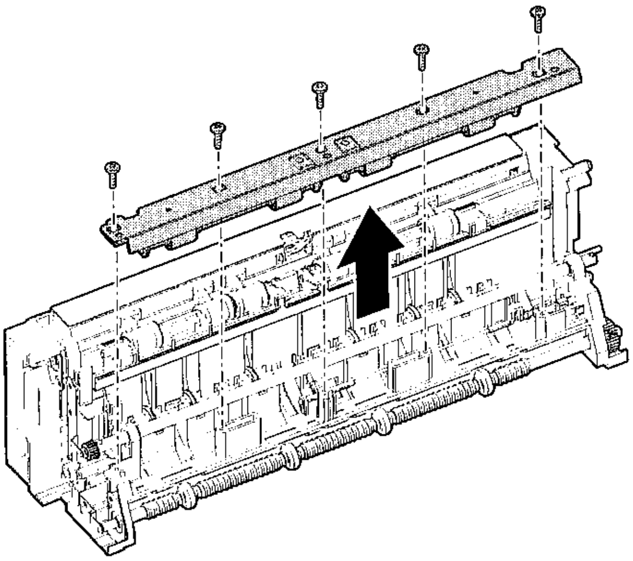
a-6. Paper exit temperature sensor

1) Remove the upper cover. (See "a-3. Fusing cooling fan motor 1" in this section)
2) Remove the paper exit temperature sensor.

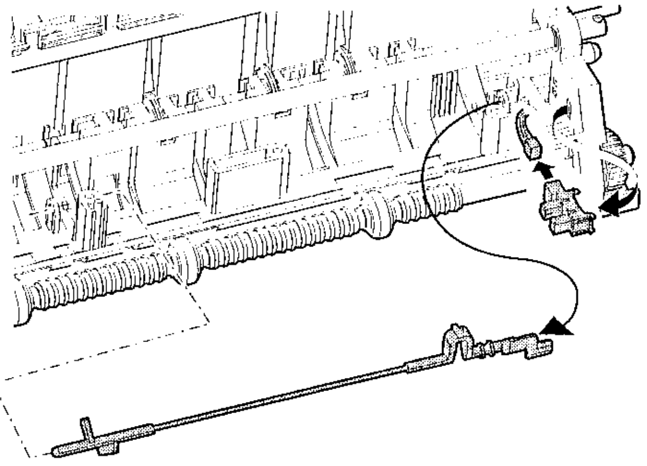


a-7. Paper exit detector 1

1) Remove the paper exit unit. (See "a. Paper exit unit" in this section)
2) Remove the follower roller unit.



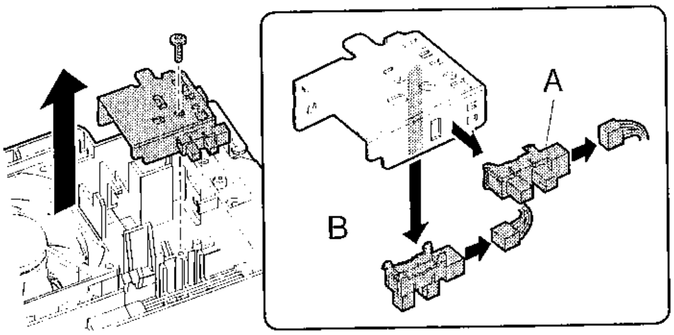
3) Remove the paper exit detection 1 detector.



a-8. Paper exit detector 2

a-9. Paper exit detector 3

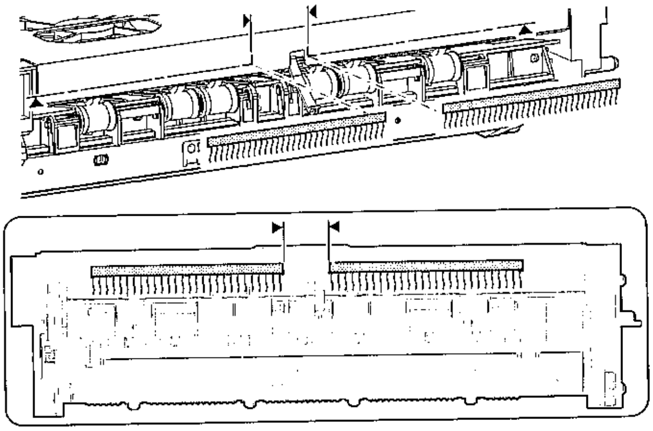
1) Remove the paper exit unit. (See "a. Paper exit unit" in this section)
2) Remove the upper cover. (See "a-3. Fusing cooling fan motor 1" in this section)
3) Remove the paper exit detection 2 detector (B) and the paper exit detection 3 detector (A).



a-10. Discharge brush

1) Remove the paper exit unit. (See "a. Paper exit unit" in this section)
2) Remove the discharge brush.

▲ * When attaching the discharge brush, fit the edge with the mark line.

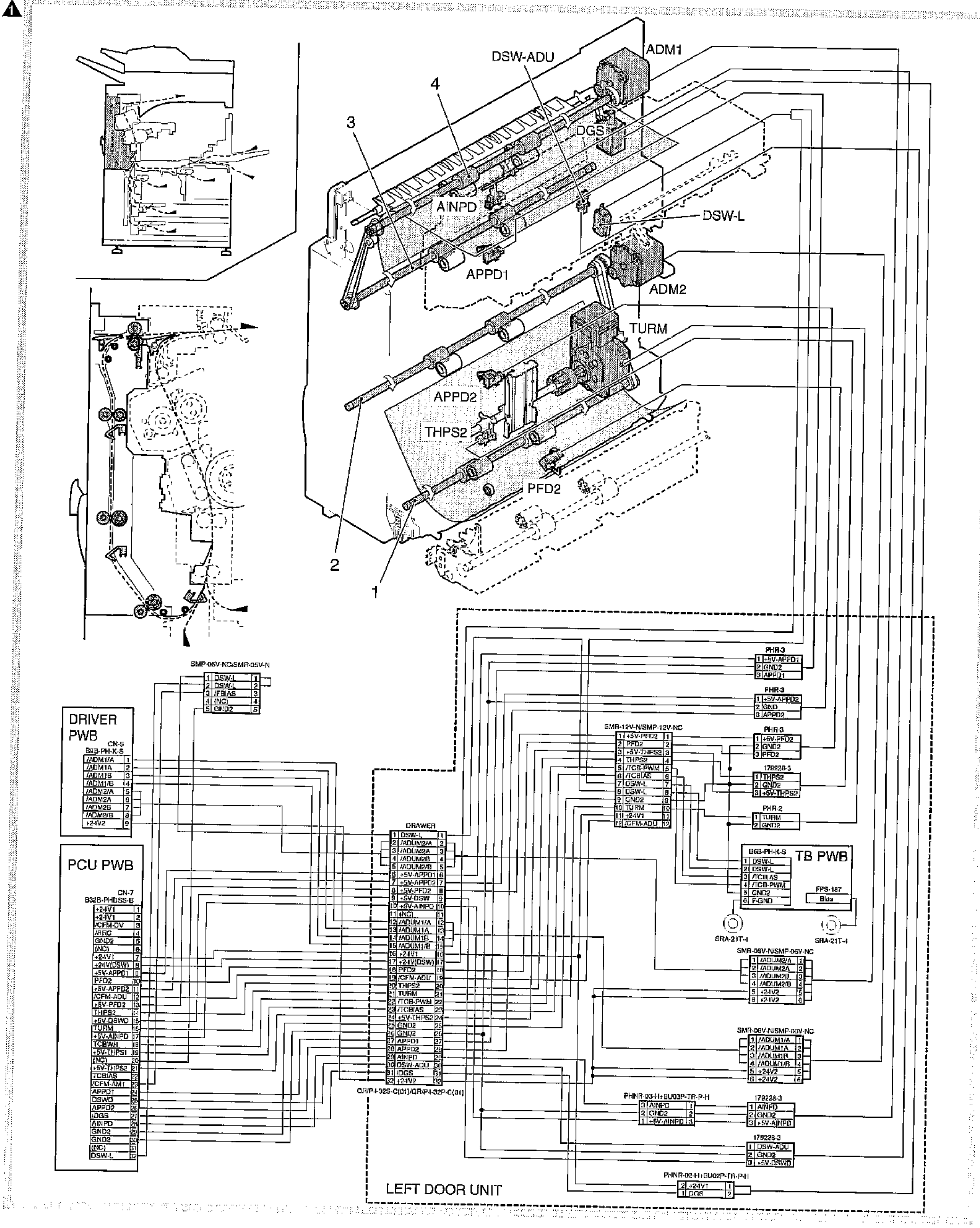


(Duplex section)

A. General

When duplex print is selected, paper one surface of which was printed is switched back to feed to the duplex section to make duplex print.

B. Major parts and signal functions


DSW-ADU
ADM1
4
3
DGS
AINPD
DSW-L
APPD1
ADM2
TURM
APPD2
THPS2
PFD2
2
1
SMP-05V-NC/SMR-05V-N
1 DSW-L 1
2 DSW-L 2
3 /FBIAS 3
4 (NC) 4
5 GND2 5
DRIVER PWB
CN-5
B9B-PH-K-S
/ADM1/A 1
/ADM1A 2
/ADM1B 3
/ADM1/B 4
/ADM2/A 5
/ADM2A 6
/ADM2B 7
/ADM2/B 8
+24V2 9
PCU PWB
CN-7
B32B-PHDSS-B
+24V1 1
+24V1 2
/CFM-DV 3
/RRC 4
GND2 5
(NC) 6
+24V1 7
+24V(DSW) 8
+5V-APPD1 9
PFD2 10
+5V-APPD2 11
/CFM-ADU 12
+5V-PFD2 13
THPS2 14
+5V-DSWD 15
TURM 16
+5V-AINPD 17
TCBWH 18
+5V-THPS1 19
(NC) 20
+5V-THPS2 21
TCBIAS 22
/CFM-AM1 23
APPD1 24
DSWD 25
APPD2 26
/DGS 27
AINPD 28
GND2 29
GND2 30
(NC) 31
DSW-L 32
DRAWER
1 DSW-L 1
2 /ADUM2/A 2
3 /ADUM2A 3
4 /ADUM2B 4
5 /ADUM2/B 5
6 +5V-APPD1 6
7 +5V-APPD2 7
8 +5V-PFD2 8
9 +5V-DSW 9
10 +5V-AINPD 10
11 (NC) 11
12 /ADUM1/A 12
13 /ADUM1A 13
14 /ADUM1B 14
15 /ADUM1/B 15
16 +24V1 16
17 +24V(DSW) 17
18 PFD2 18
19 /CFM-ADU 19
20 THPS2 20
21 TURM 21
22 /TCB-PWM 22
23 /TCBIAS 23
24 +5V-THPS2 24
25 GND2 25
26 GND2 26
27 APPD1 27
28 APPD2 28
29 AINPD 29
30 DSW-ADU 30
31 /DGS 31
32 +24V2 32
QR/P4-32S-C(01)/QR/P4-32P-C(01)
SMR-12V-N/SMP-12V-NC
1 +5V-PFD2 1
2 PFD2 2
3 +5V-THPS2 3
4 THPS2 4
5 /TCB-PWM 5
6 /TCBIAS 6
7 DSW-L 7
8 DSW-L 8
9 GND2 9
10 TURM 10
11 +24V1 11
12 /CFM-ADU 12
PHR-3
1 +5V-APPD1
2 GND2
3 APPD1
PHR-3
1 +5V-APPD2
2 GND
3 APPD2
PHR-3
1 +5V-PFD2
2 GND2
3 PFD2
179228-3
1 THPS2
2 GND2
3 +5V-THPS2
PHR-2
1 TURM
2 GND2
B6B-PH-K-S
TB PWB
1 DSW-L
2 DSW-L
3 /TCBIAS
4 /TCB-PWM
5 GND2
6 F-GND
FPS-187
Bias
SRA-21T-4
SRA-21T-4
SMR-06V-N/SMP-06V-NC
1 /ADUM2/A 1
2 /ADUM2A 2
3 /ADUM2B 3
4 /ADUM2/B 4
5 +24V2 5
6 +24V2 6
SMR-06V-N/SMP-06V-NC
1 /ADUM1/A 1
2 /ADUM1A 2
3 /ADUM1B 3
4 /ADUM1/B 4
5 +24V2 5
6 +24V2 6
PHNR-03-H+BU03P-TR-P-H
3 AINPD 1
2 GND2 2
1 +5V-AINPD 3
179228-3
1 AINPD
2 GND2
3 +5V-AINPD
179228-3
1 DSW-ADU
2 GND2
3 +5V-DSWD
PHNR-02-H+BU02P-TR-P-H
2 +24V1 1
1 DGS 2
LEFT DOOR UNIT

▲ : Feb. 6 2004

Code	Signal name	Name	Function/Operation	Type	Model	Note
AINPD	AINPD	Duplex (ADU) paper entry detector	Duplex (ADU) paper entry detection, detection of paper exit to finisher	Transmission type		Paper transport system sensor
APPD1	APPD1	Duplex (ADU) paper pass detector 1	Duplex (ADU) upstream paper pass detection	Transmission type		Paper transport system sensor
APPD2	APPD2	Duplex (ADU) paper pass detector 2	Duplex (ADU) midstream paper pass detection	Transmission type		Paper transport system sensor
DSW-ADU	DSW-ADU	Duplex (ADU) cover open/close detector	Duplex (ADU) cover open/close detection	Transmission type		Door switch
▲ PFD2	PFD2	Paper pass detector 2	Paper pass detection (Left door unit) from duplex (ADU)/Paper feed tray 1, 3, 4	Transmission type		Paper transport system sensor
THPS2	THPS2	Transfer belt contact/separation home position sensor 2	Transfer belt separation home position detection 2	Transmission type		Other sensors, switch
▲ ADM1	ADM1	Duplex (ADU) motor 1	Drives the paper exit rollers 2 and the paper transport roller 19.	Stepping motor		High speed only
ADM2	ADM2	Duplex (ADU) motor 2	Drives the paper transport roller 20 and 21.	Stepping motor		Selection of Normal speed/ High speed
TURM	TURM	Transfer separation motor	Drives and separates the transfer belt.	DC brush motor		The transfer belt is pressed on the OPC drum only during printing.
DGS	DGS	Paper exit gate solenoid	Drives the paper exit gate.	Electromagnetic solenoid		
DSW-L	DSW-L	Left door open/close detector	Left door open/close detection	Micro switch		Door switch

No.	Name	Function
1	Transport roller 21 (Drive)	Transports paper from the transport roller 20 to the transport roller 15.
2	Transport roller 20 (Drive)	Transports paper from the transport roller 19 to the transport roller 21.
3	Transport roller 19 (Drive)	Transports paper from the transport roller 2 to the transport roller 20.
4	Paper exit roller 1	Discharges paper. / Transports paper to the duplex (ADU) section.

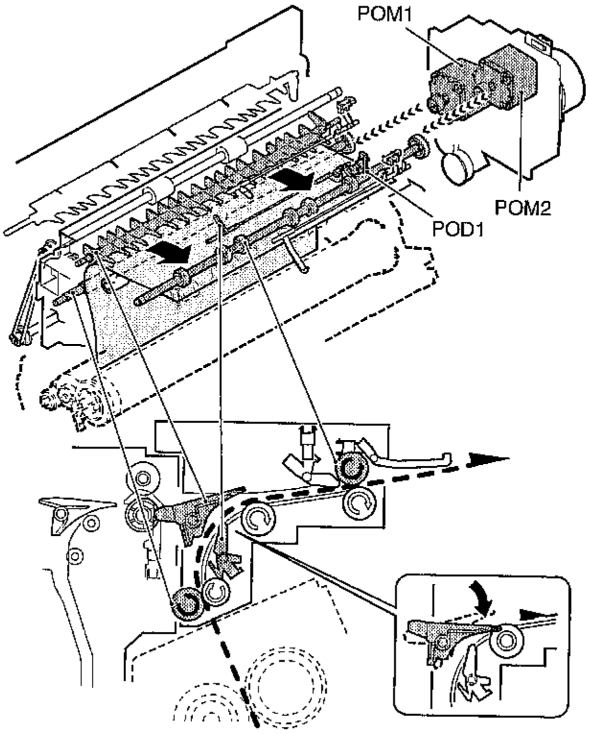
C. Operational descriptions

(1) Paper transport operation in duplex print

a. Switchback operation and transport to the reverse section

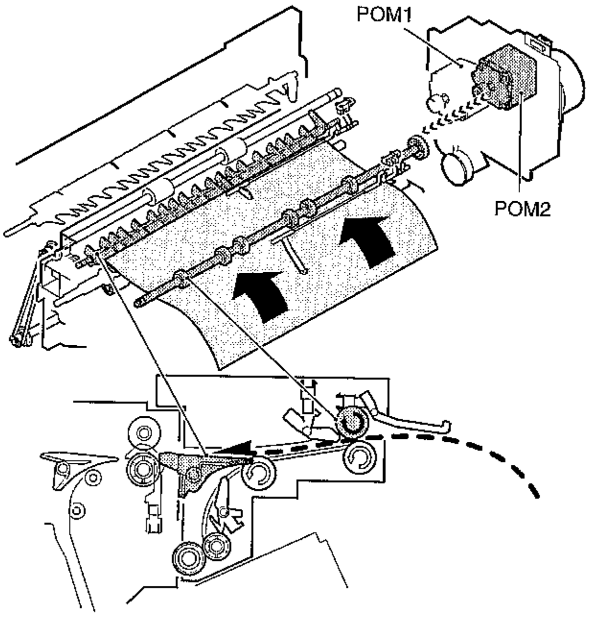
1) The paper transported from the fusing section is sent to the paper exit roller 1 (which is driven by the paper exit motor 2 (POM2)) with the transport roller 16 (which is driven by the paper exit motor 1 (POM1)).

   At this time, paper is passed under the paper exit guide. After paper passing, the paper exit gate guide falls down by its own weight.

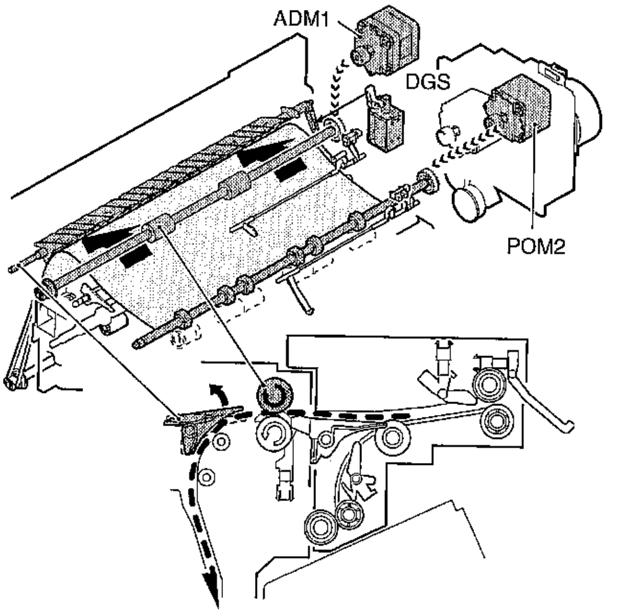


2) When the specified time has passed from detection of the paper lead edge by POD1 (paper exit detection from fusing), POM2 rotates in the normal direction, then rotates in the reverse direction in the specified time. (The rotation time differs depending on the paper size.)
3) When POM2 rotates reversely, paper is transported to the reverse section.

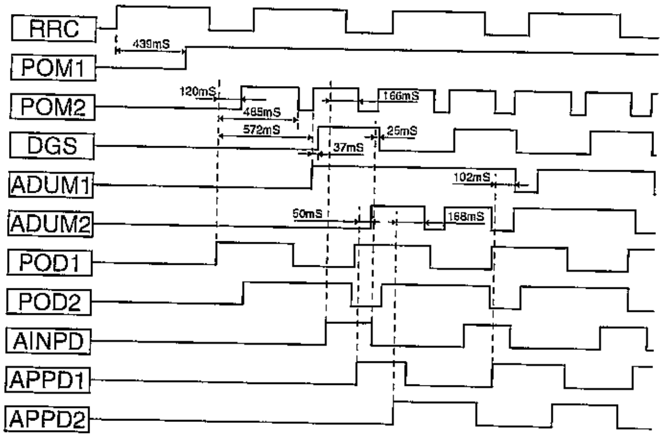
   At that time, paper is passed over the paper exit gate guide which fell down by it own weight.



4) When the specified time has passed from reverse rotation of POM2, DGS (paper exit guide) turns on for a certain time and paper is sent to the reverse section.



5) POM2 stops after passing the specified time from detection the paper lead edge by AINPD (duplex paper entry detection). It rotation is changed from reverse direction to normal direction to transport the next paper.



b. Paper transport speed in duplex print

The transport speed in duplex print is changed to the high speed (800mm/sec) to increase the job speed in some positions of paper.

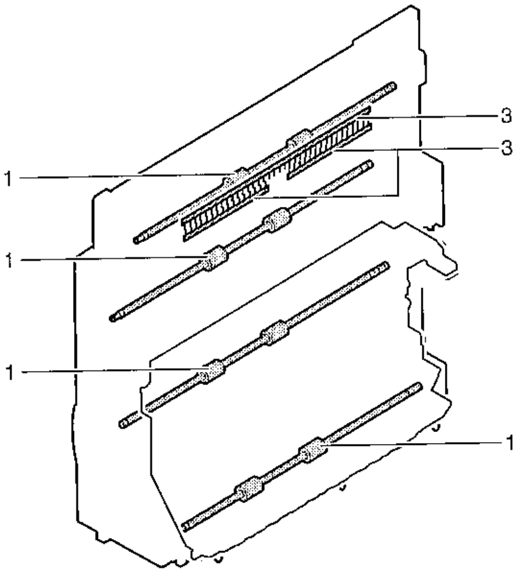
The transport speed is changed to the high speed in the Following positions:

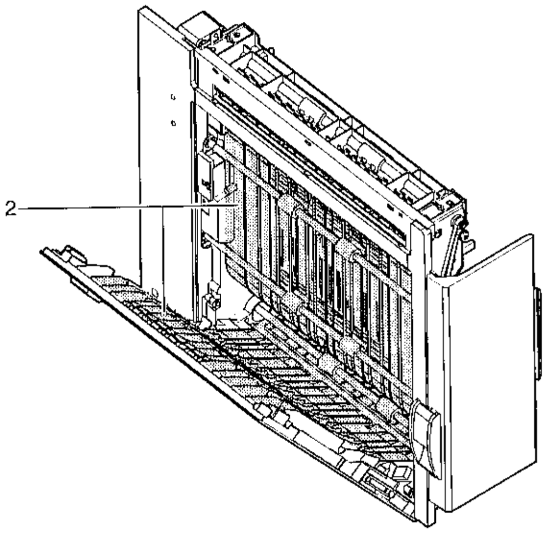
1) From when the paper rear edge passes the fusing section to when switchback operation is started.
2) From when switchback operation is started to when a certain amount of paper is transported after passing APPD1 (Paper pass detection sensor in upstream of duplex).
3) After that, paper is stopped at the duplex paper feed position and fed to the machine again. (The paper feed speed to the machine is 335mm/sec.)

⚠ : Feb. 6 2004

D. Maintenance and parts replacement

		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N, AR-M700U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Duplex	1	Transport rollers	×	○	○	○	○	○	○	○	○	
	2	Transport paper guides	○	○	○	○	○	○	○	○	○	



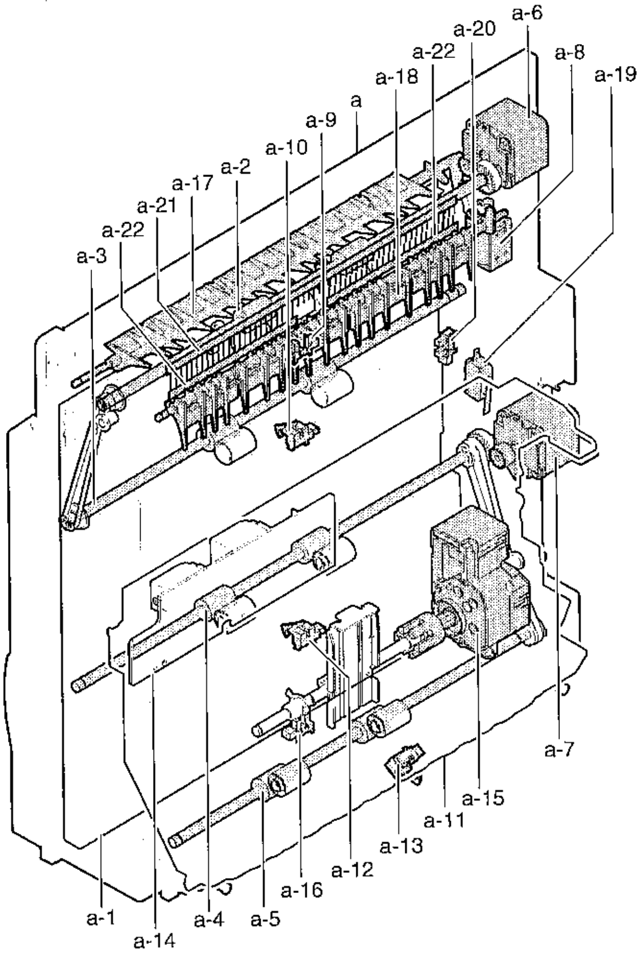


(1) Maintenance and parts replacement

(List of Replacement Parts)

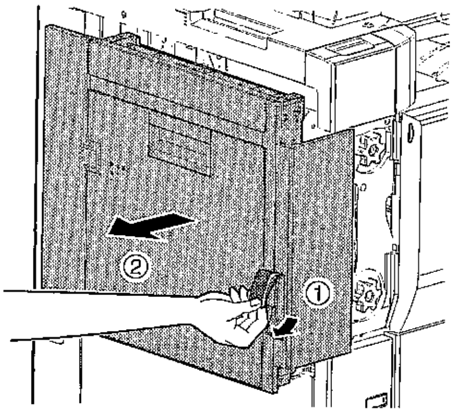
No.	Unit	Parts		
a	Left door unit	1	ADU opening/closing door	
		2	Paper exit roller 2	X○
		3	Transport roller 19	X○
		4	Transport roller 20	X○
		5	Transport roller 21	X○
		6	Duplex motor 1	
		7	Duplex motor 2	
		8	Paper exit gate solenoid	
		9	Duplex paper entry detector	
		10	Duplex paper pass detector 1	
		11	Left door transport paper guide R unit	
		12	Duplex paper pass detector 2	
		13	Paper pass detector 2	
		14	Transfer high voltage transformer	
		15	Transfer separation motor	
		16	Transfer belt separation home position sensor	
		⚠ 17	Paper exit gate	
		18	Switchback gate	
		19	Left door open/close detector	
		20	Duplex cover open/close detector	
		⚠ 21	Fusing discharge brush	×
		22	Reversing discharge brush	×

⚠

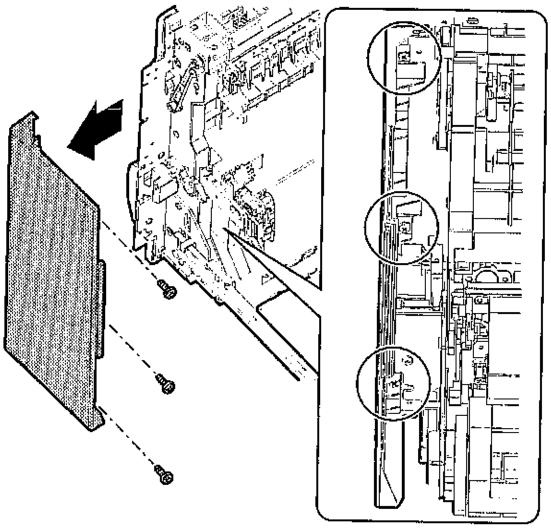


a. Left door unit

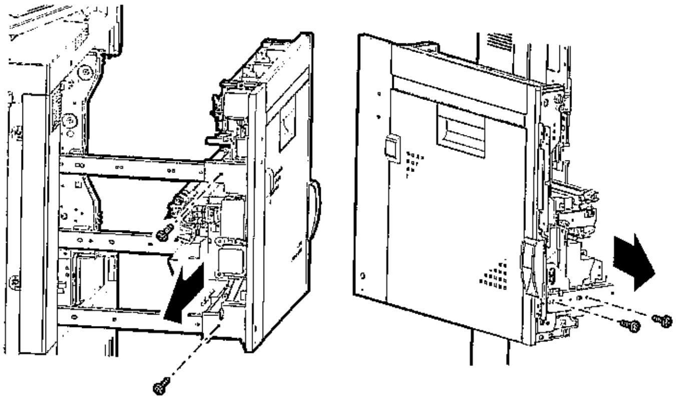
1) Pull out the left door.



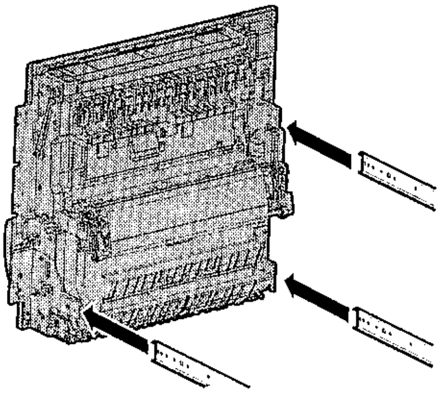
2) Remove the front cabinet.



3) Remove the fixing screw.

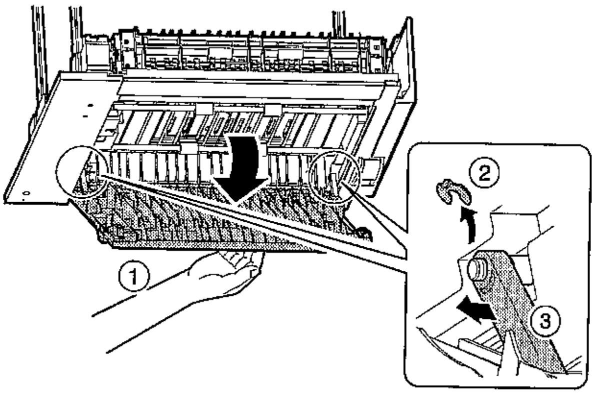


4) Remove the left door unit.

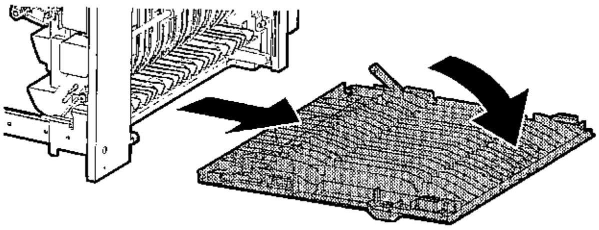


a-1. ADU opening/closing door

1) Pull out the left door.
2) Remove the stopper section plastic E-ring.

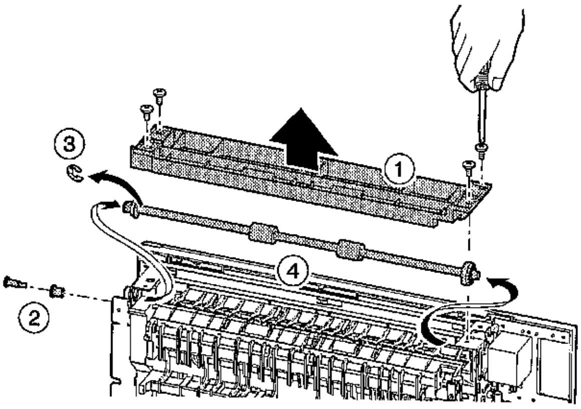


3) Remove the stopper from the fulcrum shaft to remove the opening/closing door in the arrowed direction.

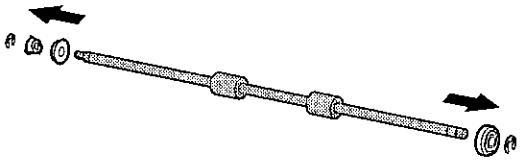


a-2. Paper exit roller 2

1) Pull out the left door.
2) Remove the ADU opening/closing door.
3) Remove the ADU paper exit upper paper guide.
4) Remove the ADU brake collar.
5) Remove the E-ring to remove the transport roller 2 assembly.



6) Remove the E-ring to remove the bearing, pulley, gear and pin from the paper exit roller.

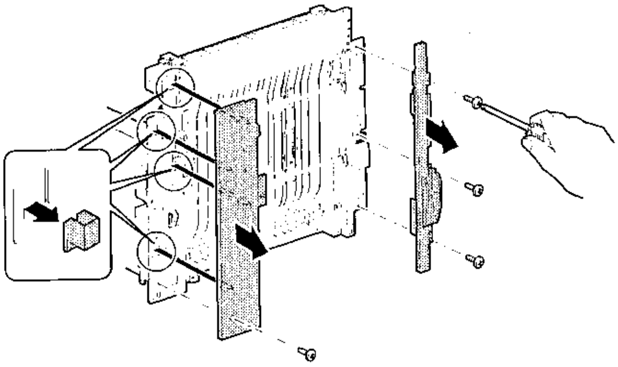


a-3. Transport roller 19

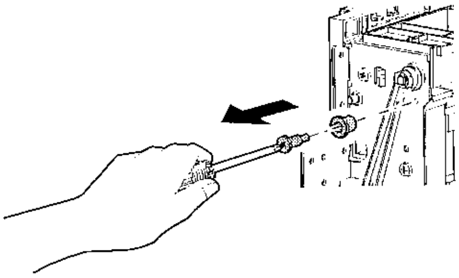
a-4. Transport roller 20

a-5. Transport roller 21

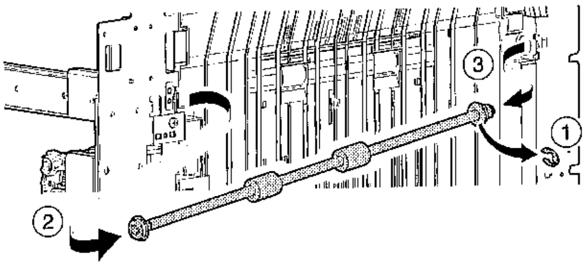
1) Pull out the left door.
2) Remove the ADU opening/closing door.
3) Remove the left door cabinet F.
4) Remove the left door cabinet R.



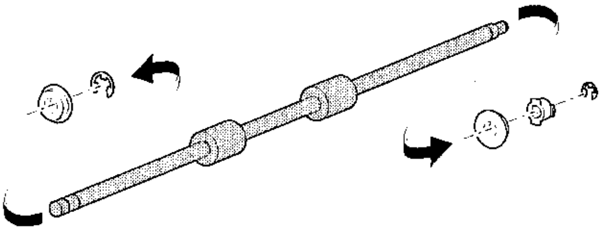
5) Remove the front belt collar.



6) Remove the E-ring to remove the transport roller 19 assembly.

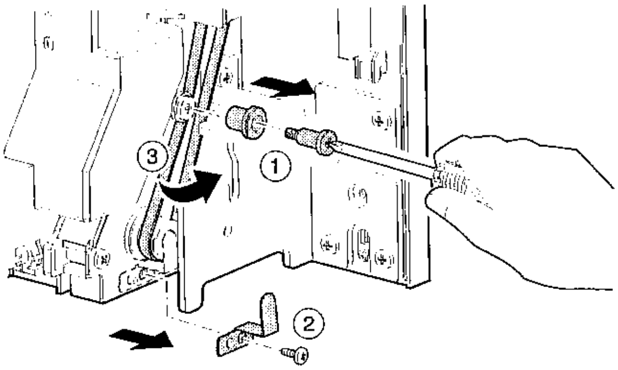


7) Remove the bearing, pulley, gear and pin from the transport roller 19.

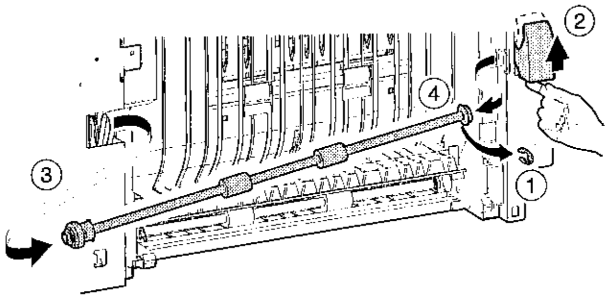


8) Remove the rear belt collar.

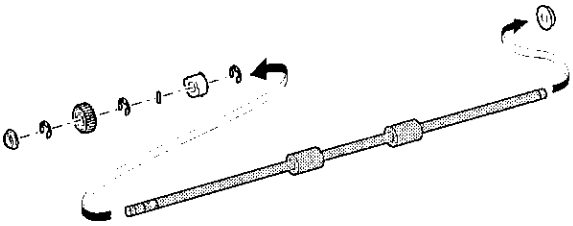
9) Remove the ground plate.



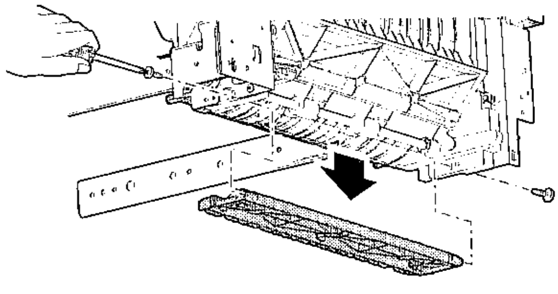
10) Remove the belt.
11) Remove the E-ring and lift up the switching lever to remove the transport roller 20 assembly.



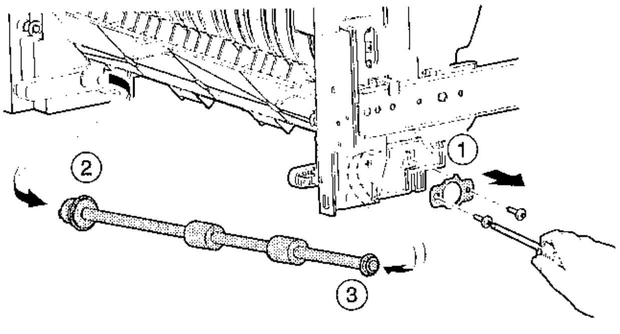
12) Remove the bearing, pulley, gear and pin from the transport roller 20.



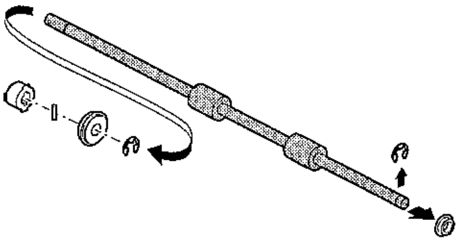
13) Remove the U-turn paper guide.



14) Apply the bearing attachment plate to remove transport roller 21.

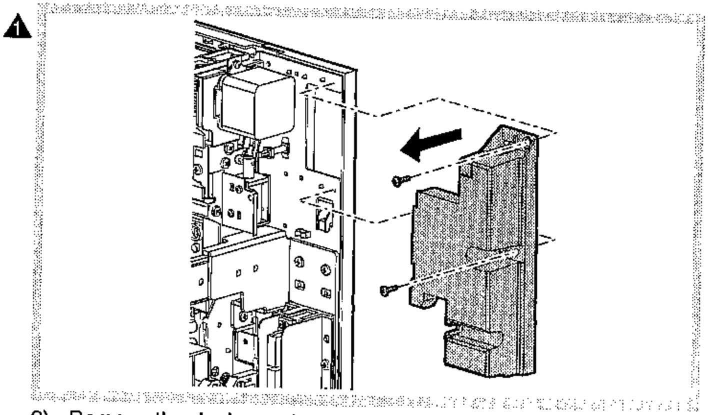


15) Remove the bearing, pulley, gear and pin from the transport roller 21.

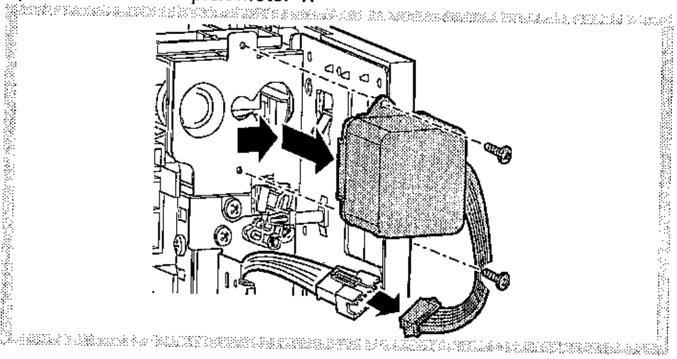


a-6. Duplex motor 1

1) Pull out the left door.
2) Remove the cover.

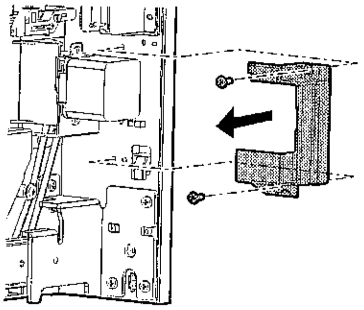


3) Remove the duplex motor 1.

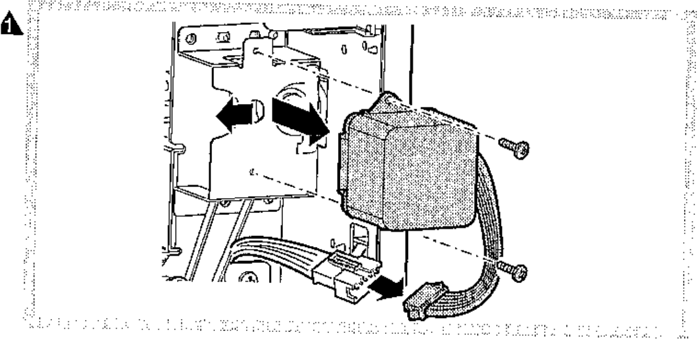


a-7. Duplex motor 2

1) Pull out the left door.
2) Remove the cover.

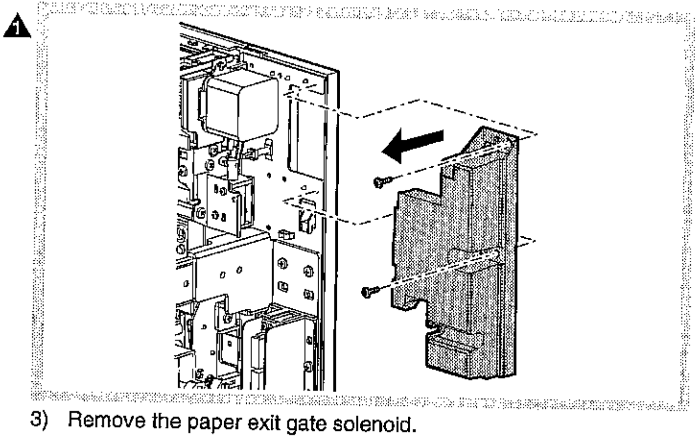


3) Remove the duplex motor 2.

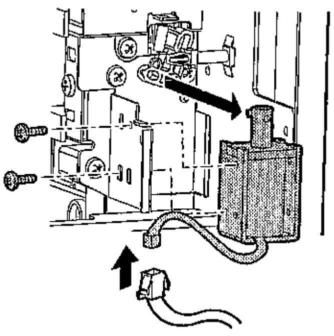


a-8. Paper exit gate solenoid

1) Pull out the left door.
2) Remove the cover.

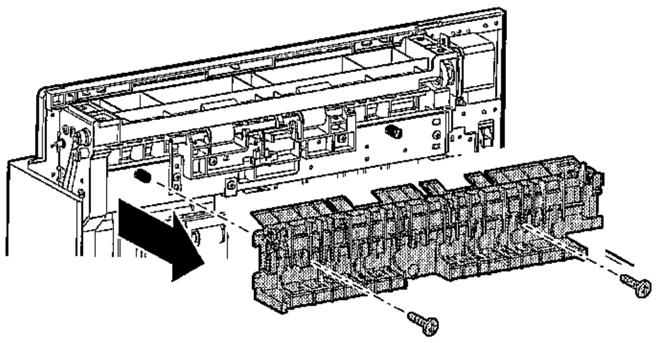


3) Remove the paper exit gate solenoid.

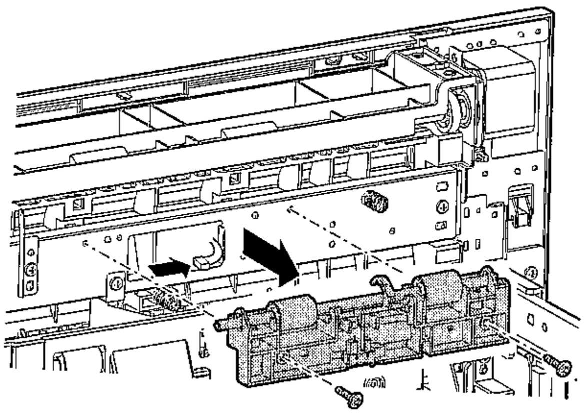


a-9. Duplex paper entry detector

1) Pull out the left door.
2) Remove the paper guide unit.

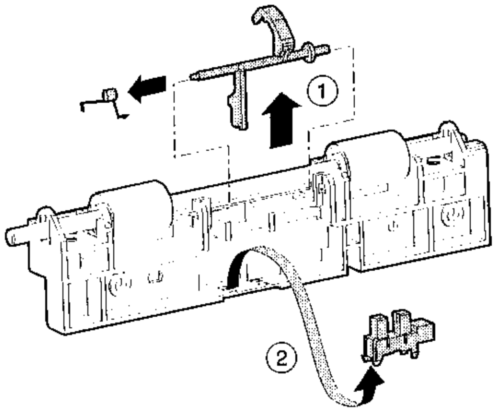


3) Remove the follower roller unit.



⚠ : Feb. 6 2004

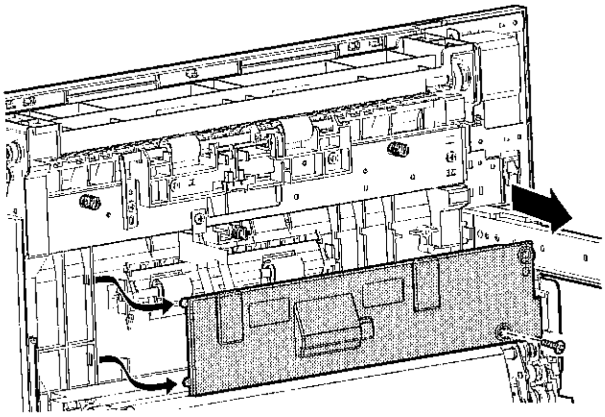
4) Remove the duplex paper entry detector.



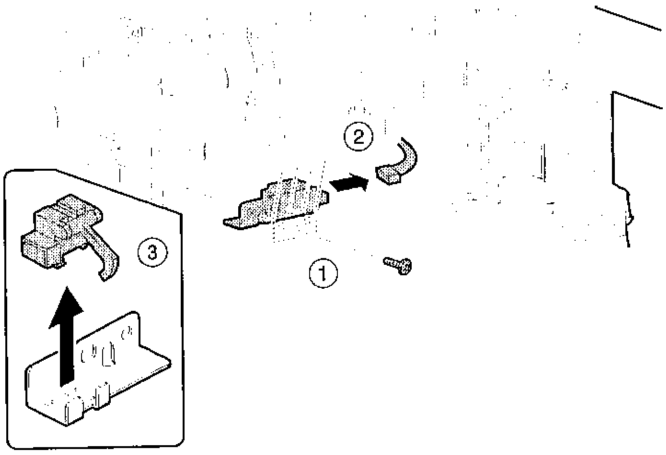
a-10. Duplex paper pass detector 1

1) Pull out the left door.
2) Remove the cover.

⚠

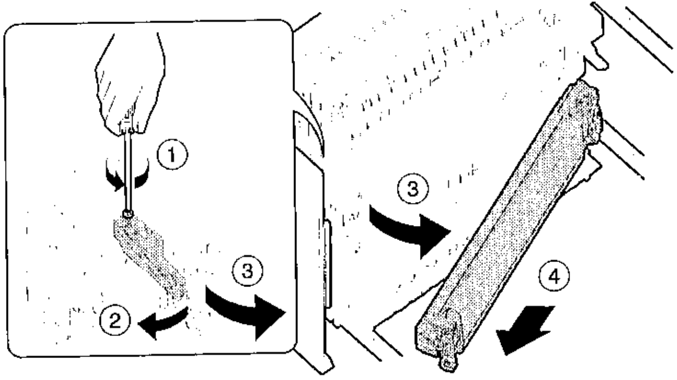


3) Remove the duplex paper pass detector 1.

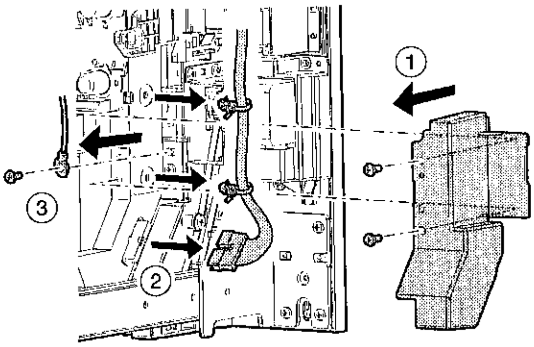


a-11. Left door transport paper guide R unit.

1) Pull out the left door.
2) Remove the transfer unit.

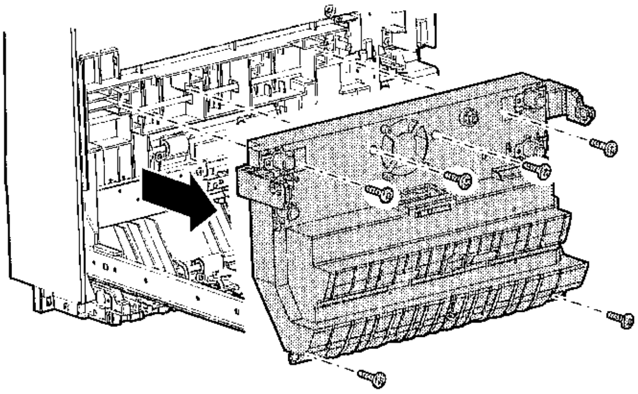


3) Remove the cover, and remove the connector, the snap band, and the earth terminal.



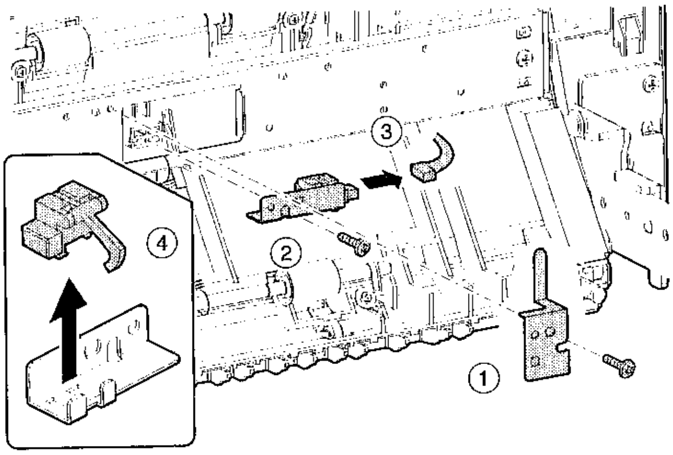
4) Remove the left door transport paper guide R unit.

⚠



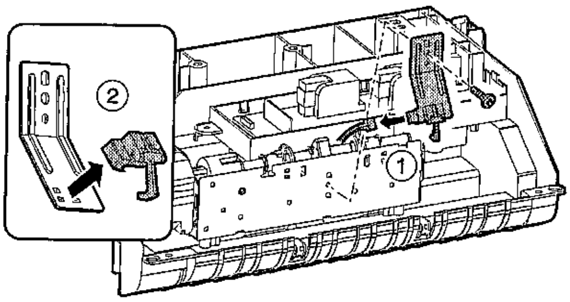
a-12. Duplex paper pass detector 2

1) Pull out the left door.
2) Remove the left door transport paper guide R unit.
3) Remove the duplex paper pass detector 2.



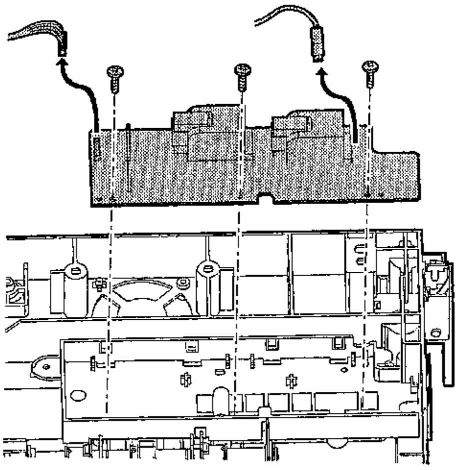
a-13. Paper pass detector 2

1) Pull out the left door.
2) Remove the left door transport paper guide R unit.
3) Remove the paper pass detector 2.



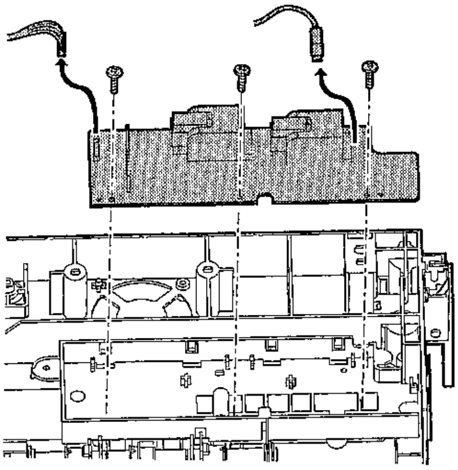
a-14. Transfer high voltage transformer

1) Pull out the left door.
2) Remove the left door transport paper guide R unit.
3) Remove the transfer high voltage transformer.

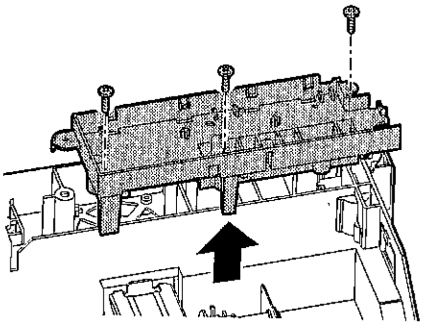


a-15. Transfer separation motor

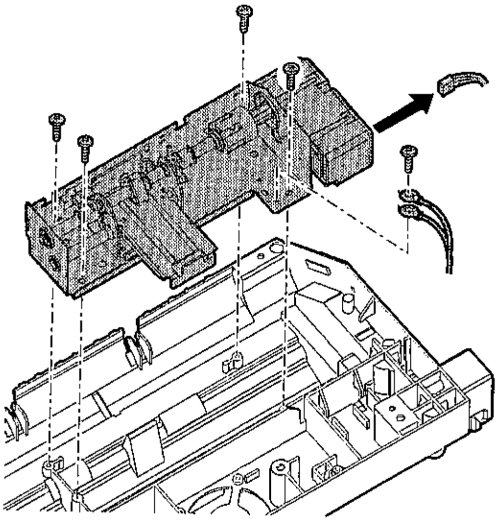
1) Pull out the left door.
2) Remove the left door transport paper guide R unit.
3) Remove the transfer high voltage transformer.



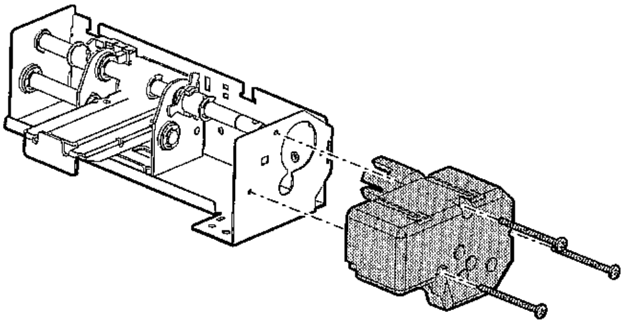
4) Remove the PWB holder.



5) Remove the transfer separation unit.

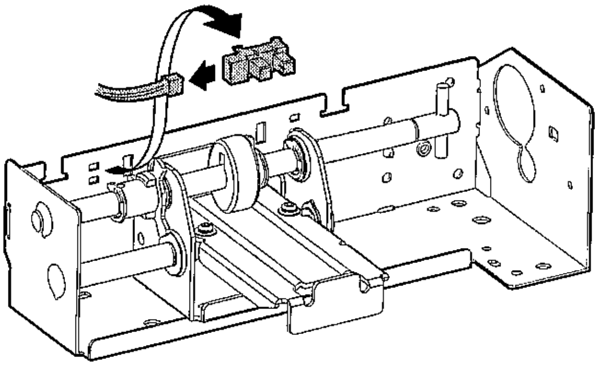


6) Remove the transfer separation motor.



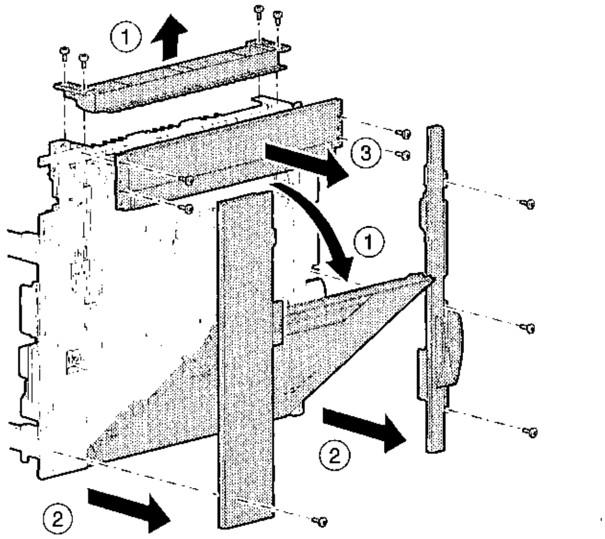
a-16. Transfer belt separation home position sensor

1) Pull out the left door.
2) Remove the left door transport paper guide R unit.
3) Remove the transfer belt separation home position sensor.

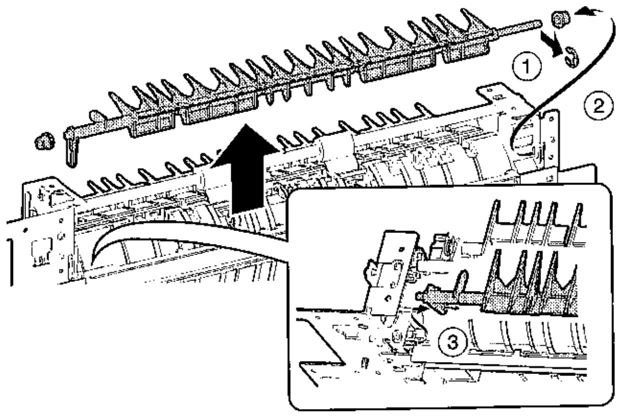


a-17. Paper exit gate

1) Pull out the left door.
2) Remove the paper guide. Open the door, and remove the cabinets.

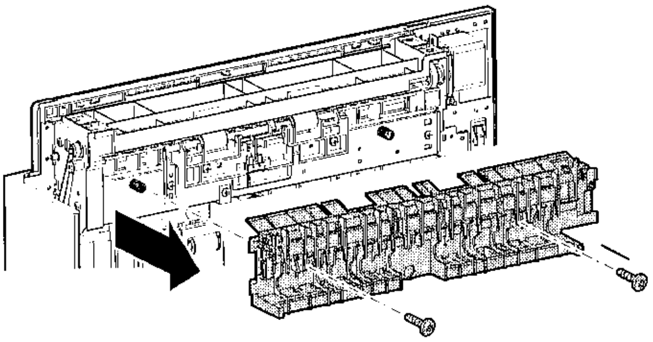


3) Remove the paper exit gate.

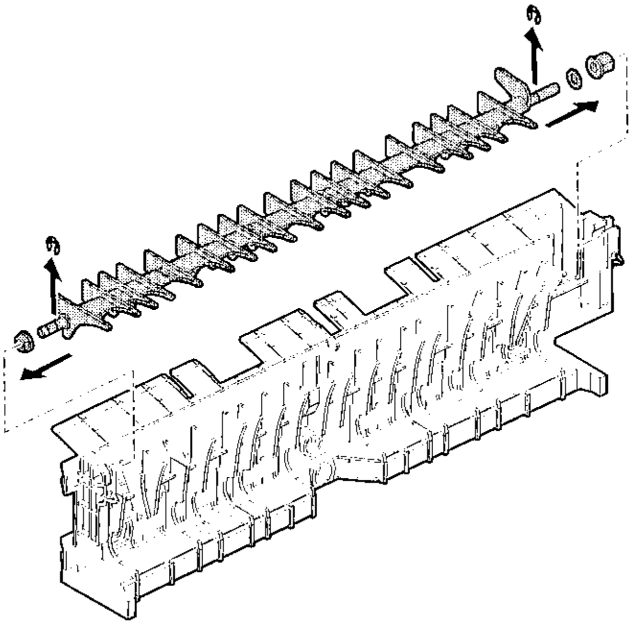


a-18. Switchback gate

1) Pull out the left door.
2) Remove the paper guide unit.

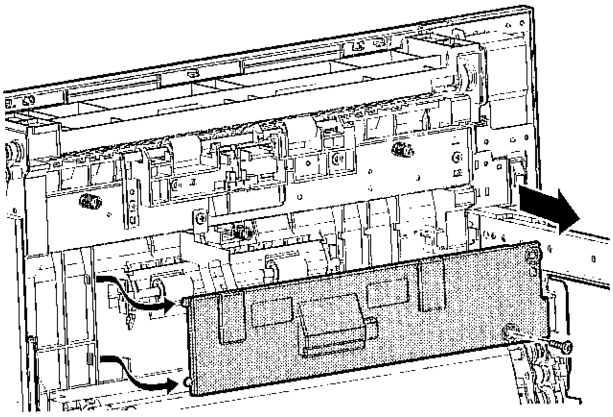


3) Remove the switchback gate.

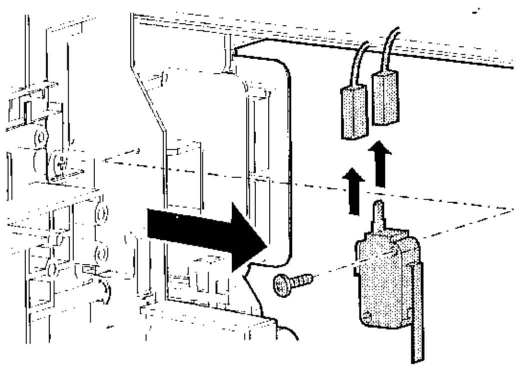


a-19. Left door open/close detector

1) Pull out the left door.
2) Remove the cover.



3) Remove the left door transport paper guide R unit.
4) Remove the left door open/close detector.



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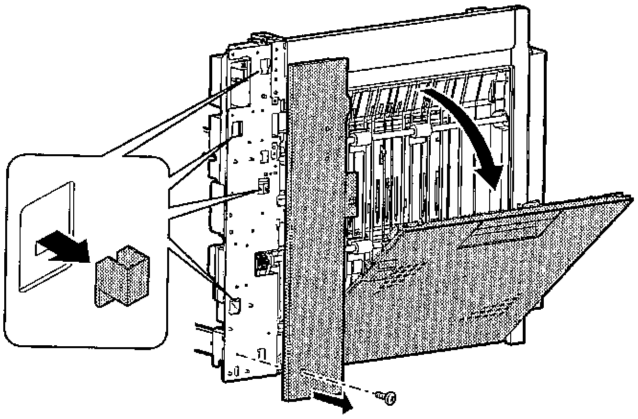
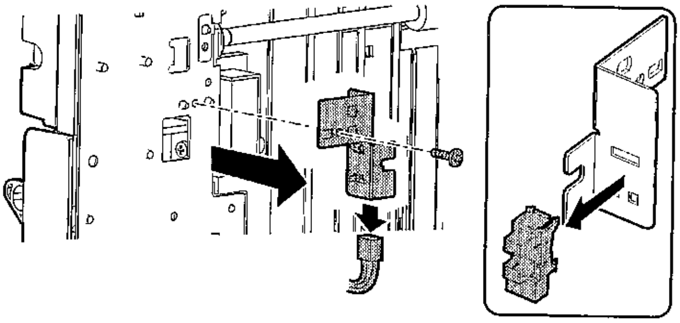
a-20. Duplex cover open/close detector

1) Pull out the left door.
2) Open the door, and remove the cover.

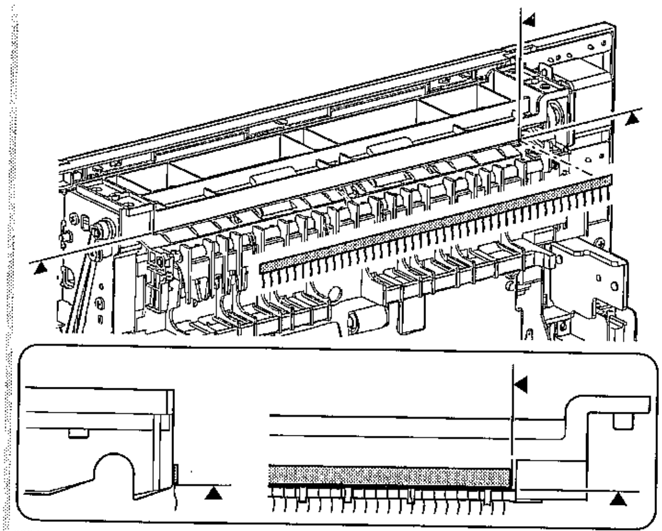


3) Remove the duplex cover open/close detector.



▲ a-21. Fusing discharge brush

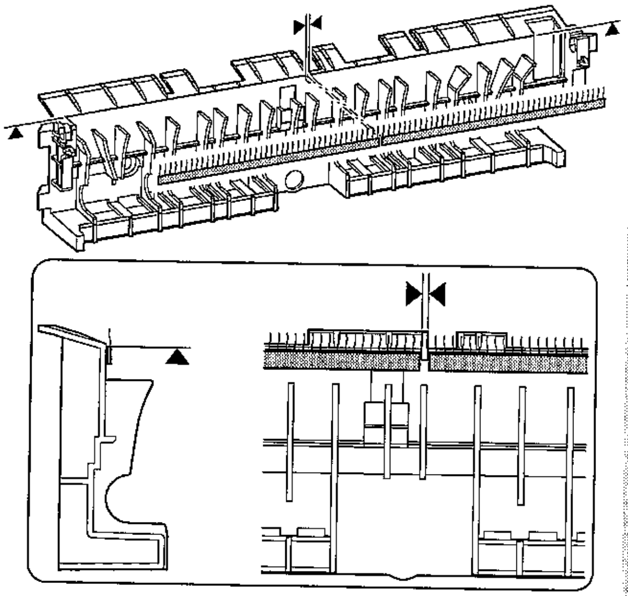
1) Pull out the left door.
2) Remove the fusing discharge brush.



* Attach the fusing discharge brush so that it is fit with the rear end.

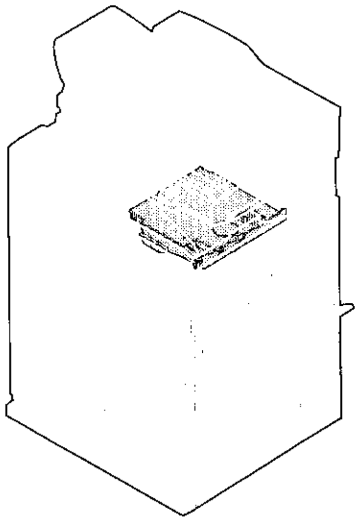
▲ a-22. Reversing discharge brush

1) Pull out the left door.
2) Remove the switchback gate.
3) Remove the reversing discharge bursh.



* Attach the reverse discharge brush so that it is fit with the rib inside and the parting line.

3. Laser scan unit (LSU)

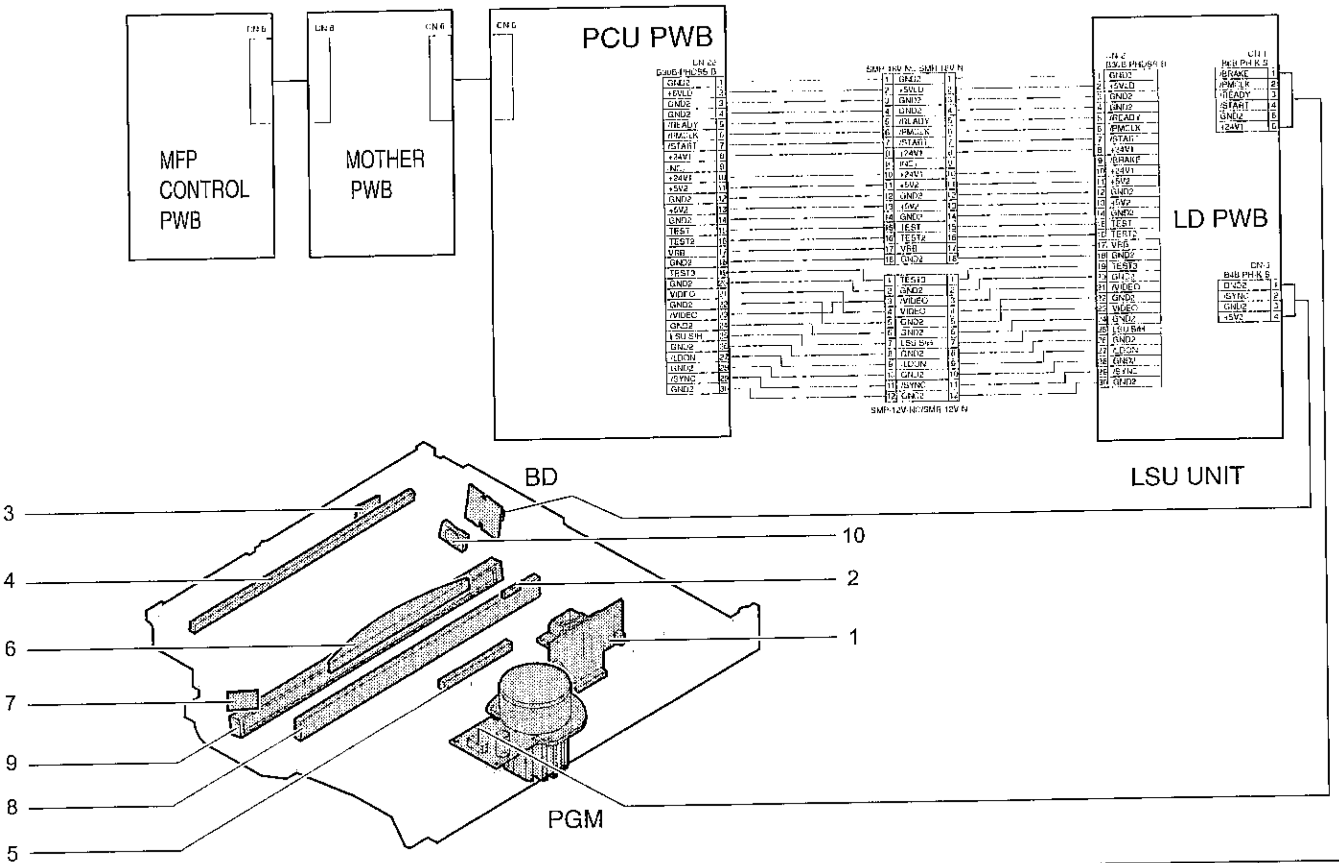


A. General

This section performs the following operations.

Image data sent from the MFP (image process circuit) through the mother board and PCU are converted into laser beams to radiate onto the drum surface.

B. Major parts and signal functions



Code	Signal name	Name	Type	Function/Operation	MODEL	NOTE
PGM	PGM	Polygon mirror (motor)		Reflects laser beams at the constant rotation speed.		
BD		BD PWB		Detects the laser scan start timing. This device is used to detect a laser trouble.		

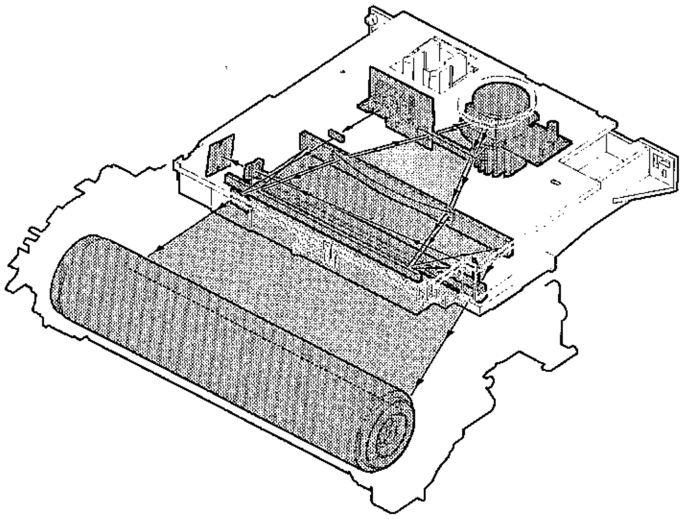
No.	Name	Function
1	Laser control PWB	Controls laser beam flashing and the output value.
2	Cylindrical lens	Converges laser beams to focus.
3	Incidence reflection mirror	Assures the optical path for laser beams.
4	No. 1 mirror	Assures the optical path for laser beams.
5	fθ lens 1	Deflects laser beams so that the laser scan speeds on the both ends of the drum and that at the center of the drum are the same.
6	fθ lens 2	

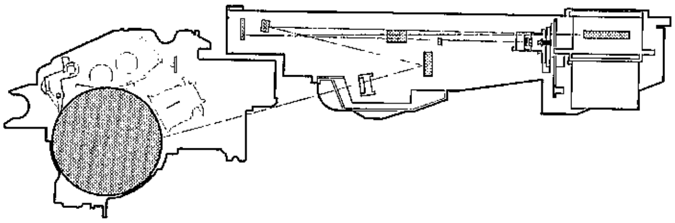
No.	Name	Function
7	BD PWB	Detects the timing of laser scan start. This device is used to detect a laser trouble.
8	No. 2 mirror	Converges laser beams to focus.
9	Plane lens	Assures the optical path for laser beams.
10	Convergence lens for BD	Converges laser beams onto the BD PWB.

No.	Name	Code, signal name	Function
RW	Control signal	+5VLD	5V power for laser diode
RW	Control signal	/READY	Polygon mirror motor READY signal ("L" in the constant speed rotation)
RW	Control signal	/PMCLK	Clock signal for driving the polygon mirror motor
RW	Control signal	/START	Polygon mirror motor drive start signal
RW	Control signal	/VIDEO	VIDEO (Image signal)
RW	Control signal	/SYNC	Sync signal (SYNC) from BD, sync signal for 1 line

C. Operational descriptions

[Laser optical path]





* This unit must not be disassembled in the market.

(1) Polygon mirror motor

Model	Number of mirror surfaces	Rotation speed	Bearing	Remark
▲ AR-M550N/U, AR-M620N/U	14 surfaces	34000rpm	AIR	Superior in silence
▲ AR-M700N/U	14 surfaces	40000rpm	AIR	

The number of mirror surfaces and the motor RPM are reduced to reduce noises and increase reliability.

(2) Outline of LSU specifications

Effective scan width:	297mm
Resolution:	600dpi
Beam diameter:	Main scan = 60 - 85 μm Sub scan = 75 - 110 μm
▲ Laser power:	0.385±0.04mW (AR-M550N/U, AR-M620N/U) 0.480±0.04mW (AR-M700N/U)
LD wave length:	770 - 795nm

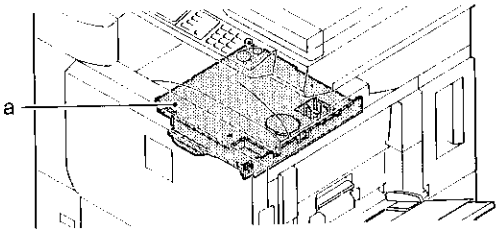
▲ : Feb. 6 2004

D. Maintenance and parts replacement

(1) Maintenance and parts replacement

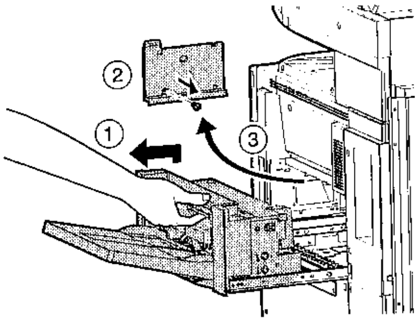
(List of Replacement Parts)

No.	Unit	Parts
a	LSU	

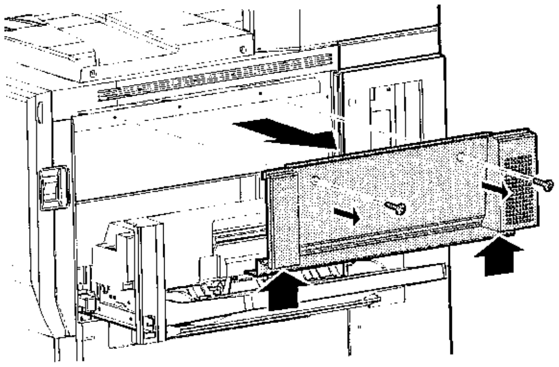


a. LSU

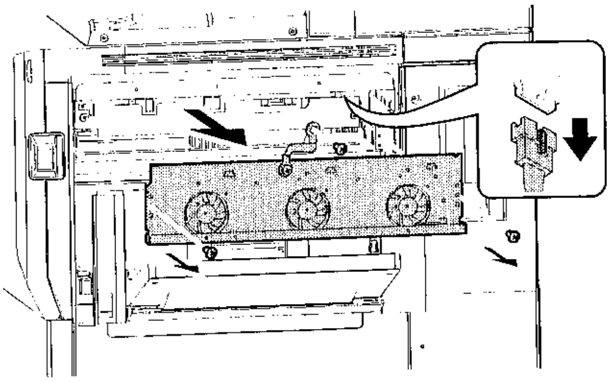
1) Pull out the multi paper feed tray, and remove the manual paper feed cover F.



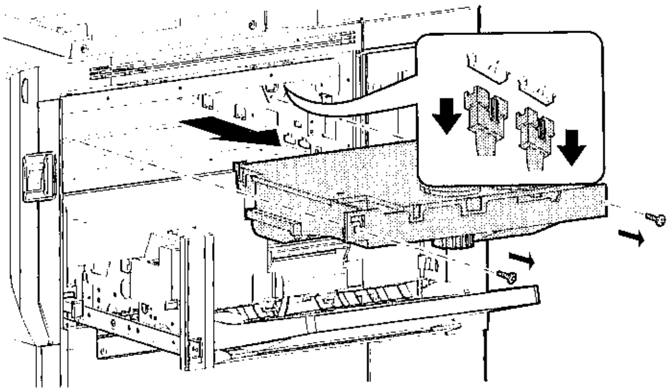
2) Pushing the lower part, remove the right cabinet center.



3) Disconnect the connector, and remove the process cooling fan unit.



4) Disconnect the connectors to remove the LSU unit.



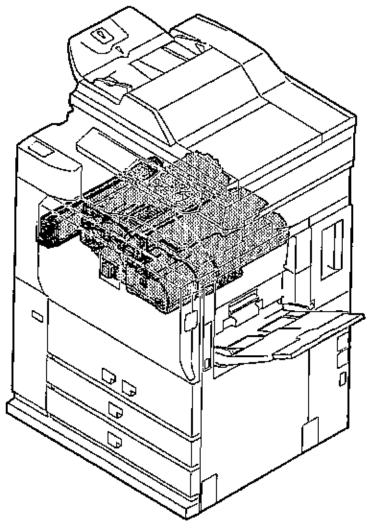
▲1: Feb. 6 2004

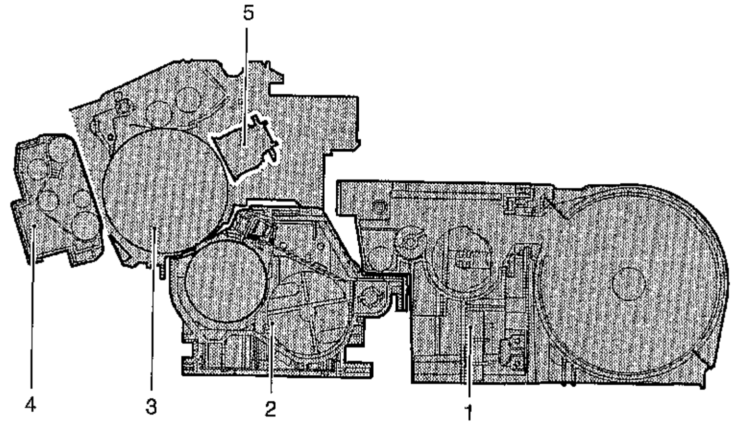
4. Image process section

A. General

Toner is attached to electrostatic latent images formed by the laser beams which were radiated to the OPC drum charged by the main charger, forming toner images.

The toner images formed on the OPC drum are transferred to paper by the transfer belt.

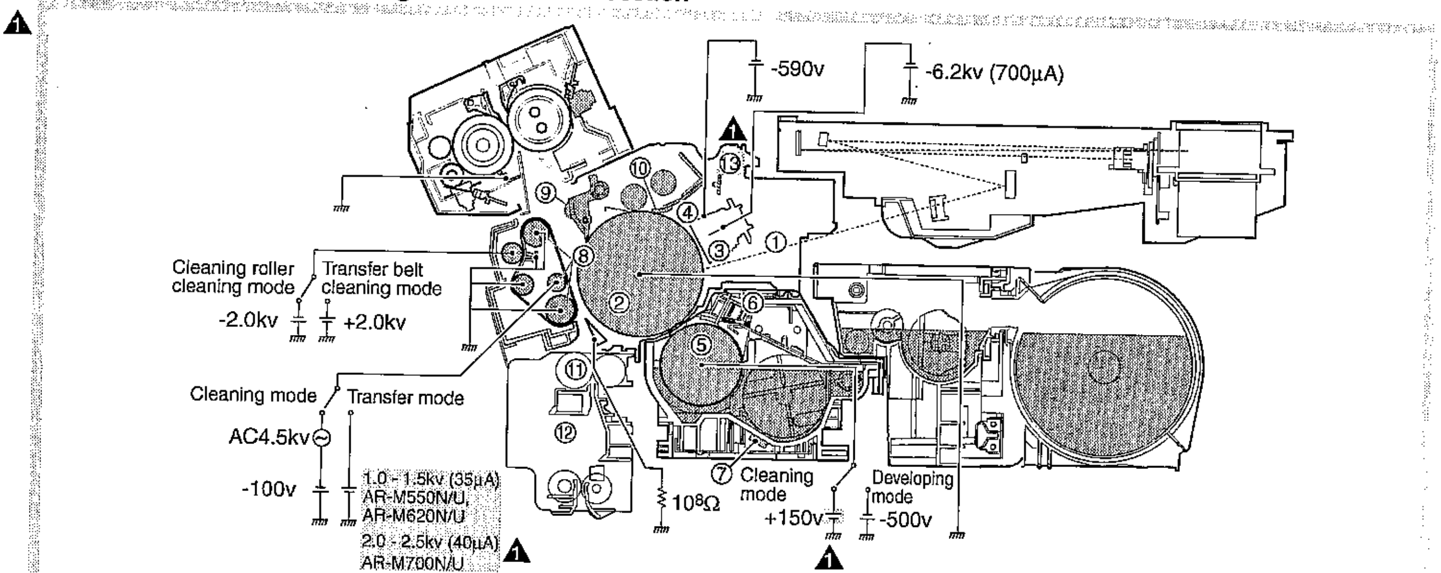




No.	Name	Operation
1	Toner hopper unit, toner bottle unit	Provides toner to the developing unit, and collects waste toner in the front section of the toner bottle unit (waste toner box section).
2	Developer unit	Mixes toner and carrier, and attaches toner to electrostatic latent images to form visible images.
3	Process drum unit	Forms images (electrostatic latent images, visible images) on the OPC drum.
4	Transfer unit	Transfers toner images to the OPC drum.
5	Main charger unit	Charges the OPC drum surface negatively and evenly.

Composition and Applied Voltage of the Process Section

▲1


-590v
-6.2kv (700µA)
▲1
⑬
⑩
⑨
④
③
①
⑧
②
⑥
⑤
⑪
⑫
⑦
Cleaning roller cleaning mode
Transfer belt cleaning mode
-2.0kv
+2.0kv
Cleaning mode
Transfer mode
AC4.5kv
-100v
1.0 - 1.5kv (35µA) AR-M550N/U, AR-M620N/U
2.0 - 2.5kv (40µA) AR-M700N/U
▲1
$10^8\Omega$
Cleaning mode
+150v
Developing mode
-500v
▲1

No.	Name	Functions
1	Laser beams	Forms electrostatic latent images on the OPC drum. (Writing resolution: 600dpi) Radiated from the LSU. The output can be set with the simulation. (Basically not changed from the default.)
2	OPC drum	Electrostatic latent images are formed by laser beams. Toner is attracted to the latent electrostatic images and transferred to paper. An OPC drum is employed. The diameter is 80mm.
3	Main charger	Applies a high voltage to charge the OLPC drum. The saw teeth type is employed.
4	Screen grid	Carries electric charges from the main charger to the OPC drum evenly.
5	MG roller	Forms a magnetic brush with developer, and applies toner to the OPC drum. -500V
6	Developing doctor	Keeps the thickness of developer or toner layer on the MG roller at a fixed level.
7	Toner concentration sensor	Detects toner in the developing tank. The transmission type sensor is employed.

▲ : Feb. 6 2004

No.	Name	Functions
8	Transfer roller	Applies a voltage to transfer toner from the OPC drum to paper.
9	Drum separation pawl	Separates paper from the OPC drum mechanically.
▲ 10	Cleaning blade	Cleans and scrapes toner from the OPC drum.
11	Resist roller	Deflects paper to adjust the paper feed timing to the process section.
12	Paper dust cleaner	Remove paper dust from the resist roller to reduce paper dust entry to the process section.
▲ 13	Discharge lamp	Discharges residual potential on the OPC drum by the lamp light.

[Toner hopper and toner bottle section]

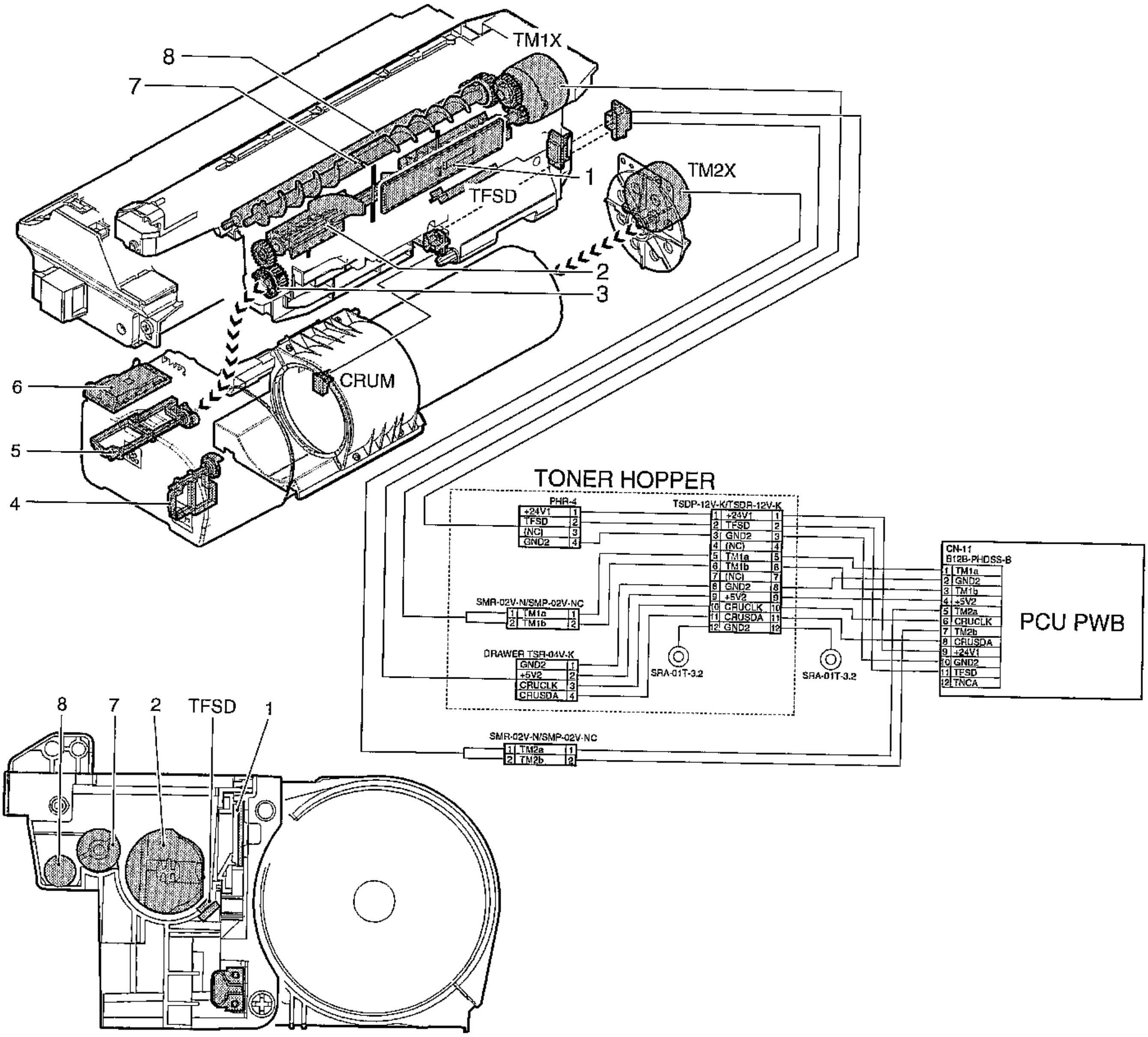
A. Outline

Adoption of the rotating toner bottle enables large capacity with a compact toner bottle size.

When the remaining toner detection sensor in the toner hopper unit detects no toner, the toner bottle turns to supply toner to the toner hopper. Following supply, since the sensor detects full or empty status inside the toner hopper based on a standard quantity of approximately 150 g of toner, even if the toner cartridge becomes empty, copying is not immediately suspended because toner inside the toner hopper is used (approximately 5K/6% print duty documents).

Destination	Toner filling amount	Life with 6% print duty documents
▲ Except Japan	1,430g/1,650g	72,000 sheets/83,000 sheets
▲ Japan	1,275g	50,000 sheets

B. Major parts and signal functions

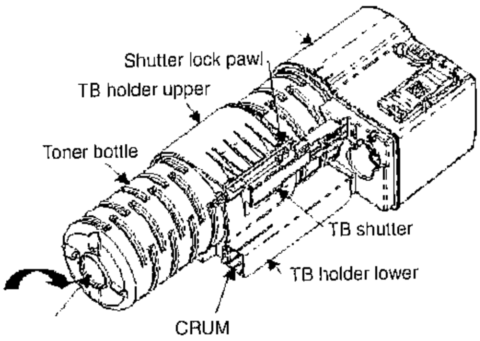

TM1X
8
7
1
TFSD
TM2X
2
3
CRUM
6
5
4
TONER HOPPER
PHR-4
+24V1 1
TFSD 2
(NC) 3
GND2 4
TSDP-12V-K/TSDR-12V-K
1 +24V1 1
2 TFSD 2
3 GND2 3
4 (NC) 4
5 TM1a 5
6 TM1b 6
7 (NC) 7
8 GND2 8
9 +5V2 9
10 CRUCLK 10
11 CRUSDA 11
12 GND2 12
SMR-02V-N/SMP-02V-NC
1 TM1a 1
2 TM1b 2
DRAWER TSR-04V-K
GND2 1
+5V2 2
CRUCLK 3
CRUSDA 4
SRA-01T-3.2
SRA-01T-3.2
SMR-02V-N/SMP-02V-NC
1 TM2a 1
2 TM2b 2
CN-11
B12B-PHDSS-B
1 TM1a
2 GND2
3 TM1b
4 +5V2
5 TM2a
6 CRUCLK
7 TM2b
8 CRUSDA
9 +24V1
10 GND2
11 TFSD
12 TNCA
PCU PWB
8
7
2
TFSD
1

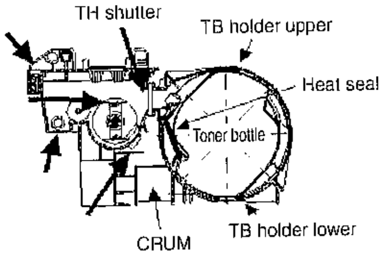
Code	Signal name	Name	Function/Operation	Type	Model	Note
TM1X	TM1X	Toner motor 1	Transports toner in the toner hopper to the developing unit. /Transports waste toner to the waste toner section.	Synchronous motor		
TM2X	TM2X	Toner motor 2	Transports toner in the toner bottle to the toner hopper.	Synchronous motor		
TFSD	TFSD	Toner remaining quantity detection signal	Toner hopper remaining quantity detection			
CRUM		CRUM lap	Stores the toner bottle information.			

No.	Name	Operation
1	TH shutter	Serves as a shutter to supply toner from the toner bottle unit to the toner hopper. When a toner bottle unit is installed, the shutter opens.
2	Toner mixing roller	Mixes toner in the toner hopper.
3	Waste toner box drive gear	Drives the waste toner transport parts.
4	Waste toner transport plate	Remains toner evenly in the waste toner box.
5	Waste toner transport plate	Remains toner evenly in the waste toner box.
6	Waste toner shutter	Serves as a shutter to receive waste toner from the process unit.
7	TH shaft	Toner supply roller to the toner unit section.
8	Toner supply roller	Toner supply roller to the developing unit section.

C. Operational descriptions

(1) Composition



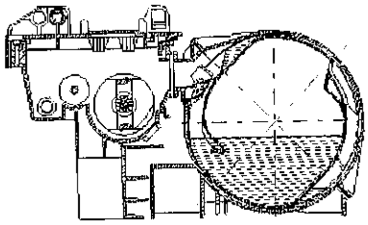


The toner cartridge is composed of the toner bottle with toner filled in it, the TB holder lower which holds the toner bottle and to which the CRUM and the waste toner box assembly are attached, and the TG holder upper.

The TB holder lower is attached to the TB shutter. When inserting it to the machine, the toner hopper rib releases the shutter lock pawl, and opens in linkage with the TH shutter. When removing the toner cartridge from the machine, the TB shutter closes.

NOTE: The toner discharge port of the toner bottle is sealed by the heat seal. Do not rotate the toner bottle manually, or the heat seal is dismantled and toner is discharged from the TB shutter port.

(2) Operation



The toner remaining quantity sensor in the toner hopper detects the toner remaining quantity by the toner stirring roller rotation. When there is little toner, the toner bottle rotating motor of the machine is rotated. The toner bottle rotates at 4.2rpm. Toner of about 54g,is supplied to the toner hopper for every rotation. When toner full is not detected after detecting the state with little toner for a certain period (4min), the toner cartridge is judged as empty, and the display to urge toner cartridge replace is shown on the operation panel.

NOTE: When the power is turned on for toner hopper replacement or cleaning, the toner cartridge replacement display is shown though toner is not accumulated enough in the toner hopper. In such a case, turn off/on the power again.

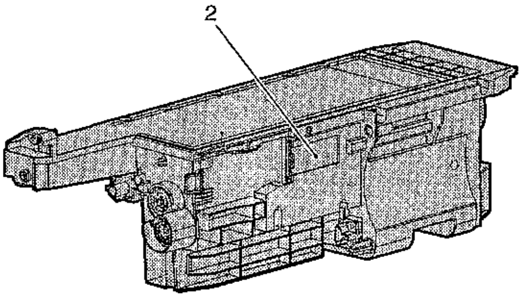
D. Maintenance and parts replacement

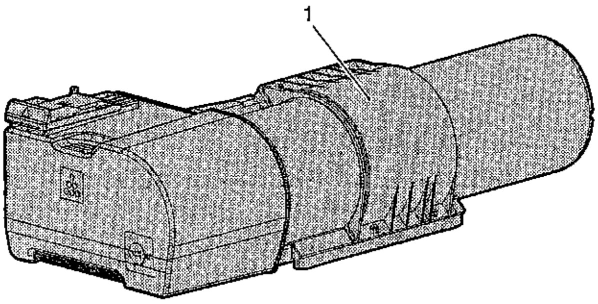
(1) Maintenance list

X: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❏: Shift position

▲

		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N, AR-M700U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Developing section	1	Toner bottle										Assembly when installing/ Replacement by user when empty
	2	Toner hopper	○	○	○	○	○	○	○	○	○	Cleaning the shutter area

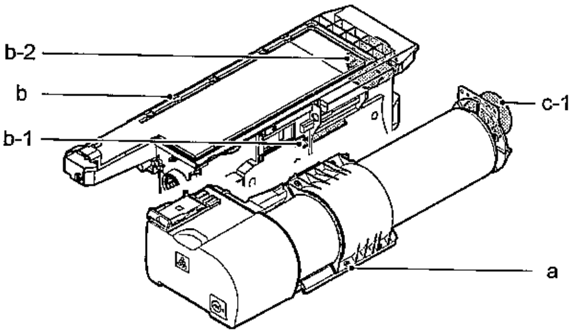




(2) Maintenance and parts replacement

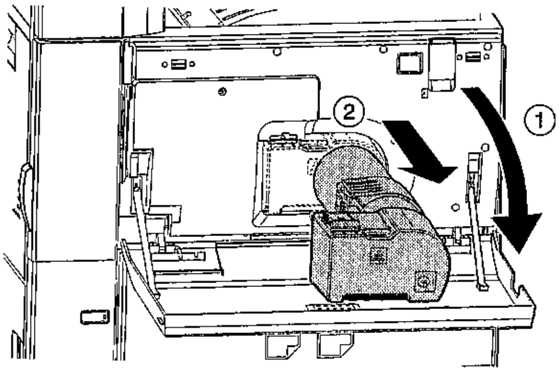
(List of Replacement Parts)

No.	Unit	Parts	
a	Toner bottle unit		
b	Toner hopper unit	1	Toner sensor
		2	Toner motor 1
c	Other	1	Toner motor 2



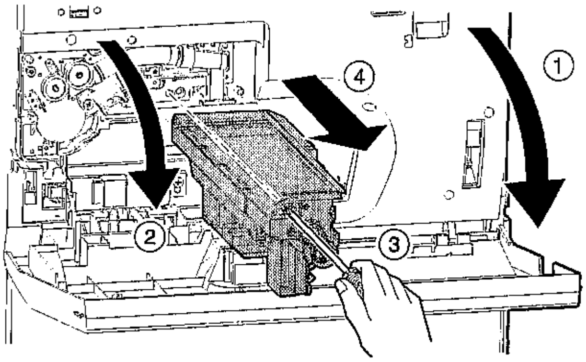
a. Toner bottle unit

1) Open the front door.
2) Remove the toner bottle.

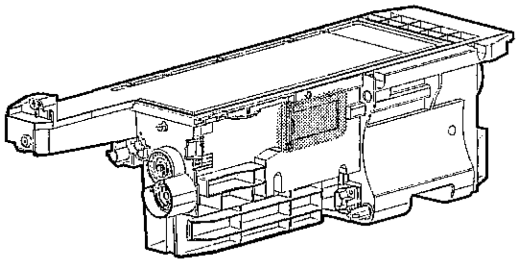


b. Toner hopper unit

1) Remove the toner bottle. (See "a. Toner bottle unit" in this section)
2) Open the process cover.
3) Remove the toner hopper unit.

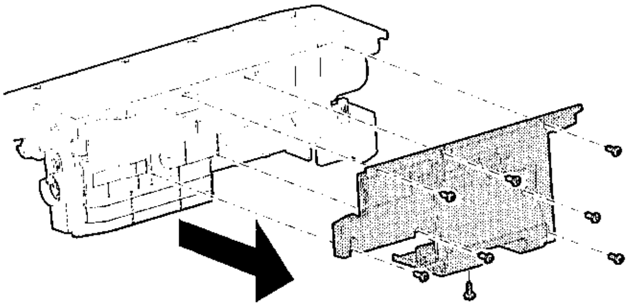


4) Clean the shutter area.

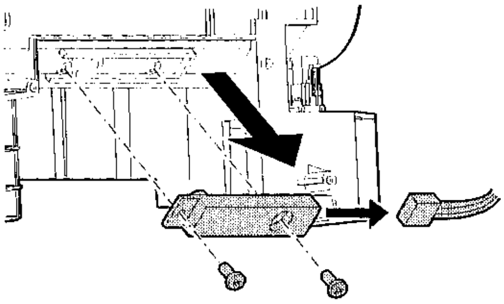


b-1. Toner sensor

1) Remove the toner hopper unit. (See "b. Toner hopper unit" in this section)
2) Remove the cover.

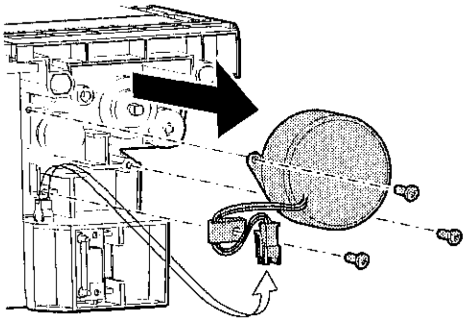


3) Remove the toner sensor.



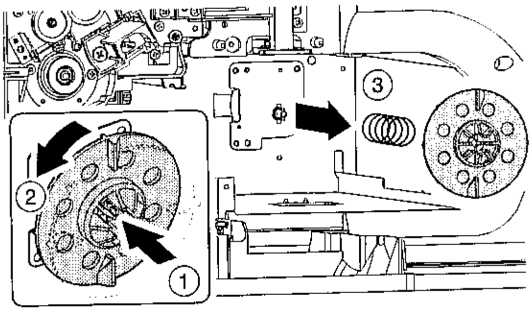
b-2. Toner motor 1

1) Remove the toner hopper unit. (See "b. Toner hopper unit" in this section)
2) Remov the toner motor 1.

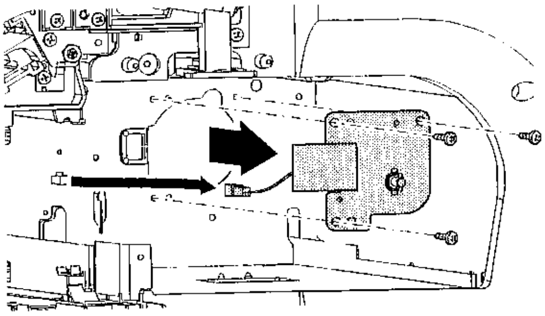


c-1. Toner motor 2

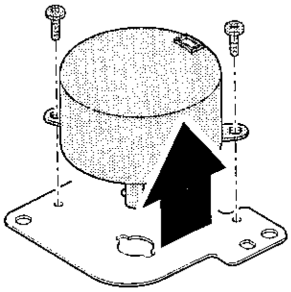
1) Remove the toner bottle. (See "b. Toner hopper unit" in this section)
2) Remove the toner hopper unit. (See "b. Toner hopper unit" in this section)
3) While pressing the bottle coupling, turn it 90 degrees to the left and remove it. Remove the spring.



4) Disconnect the connector, and remove the toner motor unit.



5) Remov the toner motor 2.



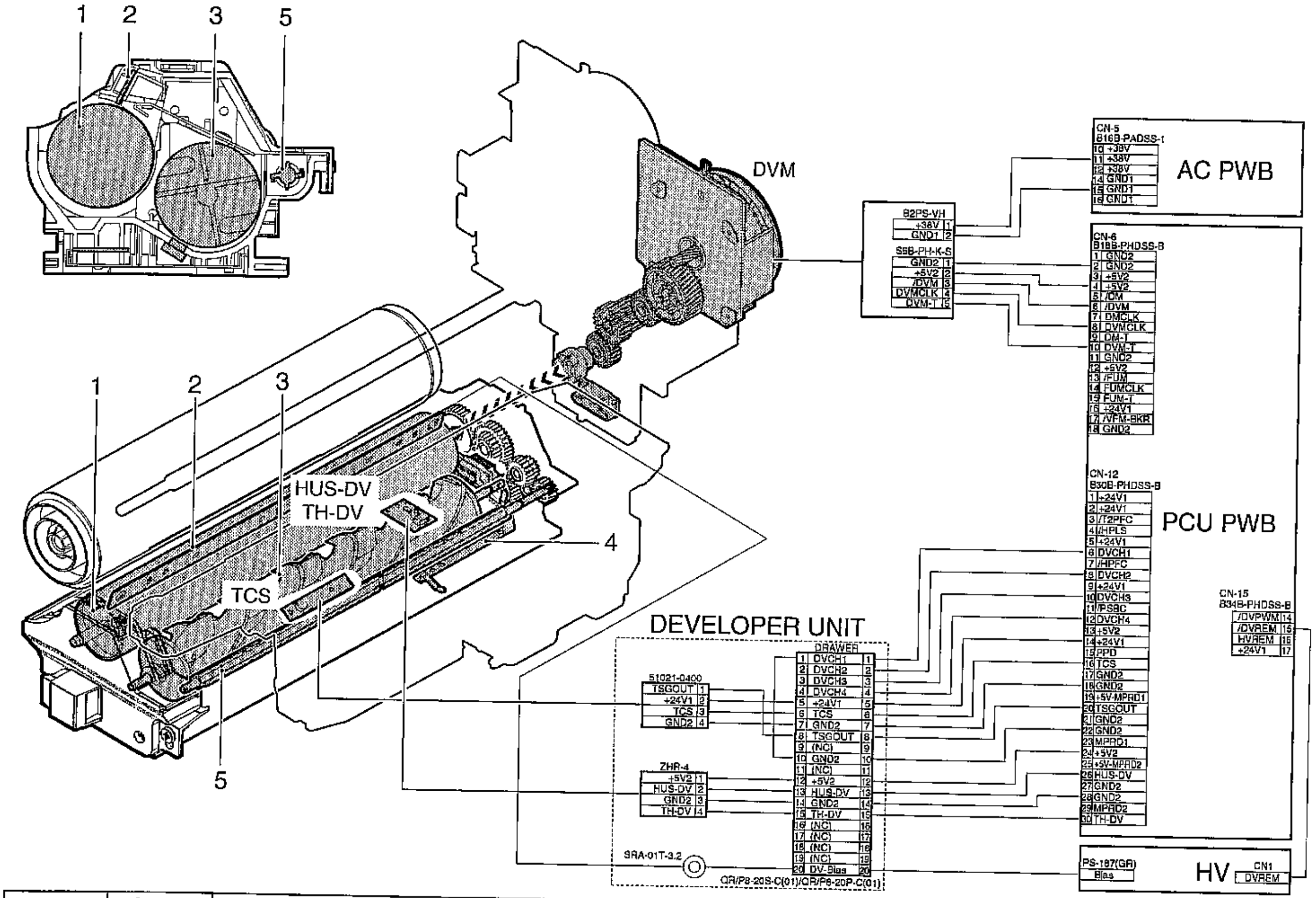
▲ : Feb. 6 2004

[Developer tank section]

A. General

In this section, toner is attached to electrostatic latent images formed by laser beams on the OPC drum, making visible images.

B. Major parts and signal functions


1
2
3
5
DVM
1
2
3
HUS-DV
TH-DV
4
TCS
5
DEVELOPER UNIT
AC PWB
CN-5
B16B-PADSS-1
10 +38V
11 +38V
12 +38V
14 GND1
15 GND1
16 GND1
B2PS-VH
+38V 1
GND1 2
S5B-PH-K-S
GND2 1
+5V2 2
/DVM 3
DVMCLK 4
DVM-T 5
PCU PWB
CN-6
B18B-PHDSS-B
1 GND2
2 GND2
3 +5V2
4 +5V2
5 /DM
6 /DVM
7 DMCLK
8 DVMCLK
9 DM-T
10 DVM-T
11 GND2
12 +5V2
13 /FUM
14 FUMCLK
15 FUM-T
16 +24V1
17 /VFM-BKR
18 GND2
CN-12
B30B-PHDSS-B
1 +24V1
2 +24V1
3 /T2PFC
4 /HPLS
5 +24V1
6 DVCH1
7 /HPFC
8 DVCH2
9 +24V1
10 DVCH3
11 /PSBC
12 DVCH4
13 +5V2
14 +24V1
15 PPD
16 TCS
17 GND2
18 GND2
19 +5V-MPRD1
20 TSGOUT
21 GND2
22 GND2
23 MPRD1
24 +5V2
25 +5V-MPRD2
26 HUS-DV
27 GND2
28 GND2
29 MPRD2
30 TH-DV
CN-15
B34B-PHDSS-B
/DVPWM 14
/DVREM 15
HVREM 16
+24V1 17
51021-0400
TSGOUT 1
+24V1 2
TCS 3
GND2 4
ZHR-4
+5V2 1
HUS-DV 2
GND2 3
TH-DV 4
SRA-01T-3.2
DRAWER
1 DVCH1 1
2 DVCH2 2
3 DVCH3 3
4 DVCH4 4
5 +24V1 5
6 TCS 6
7 GND2 7
8 TSGOUT 8
9 (NC) 9
10 GND2 10
11 (NC) 11
12 +5V2 12
13 HUS-DV 13
14 GND2 14
15 TH-DV 15
16 (NC) 16
17 (NC) 17
18 (NC) 18
19 (NC) 19
20 DV-Bias 20
QR/P8-20S-C(01)/QR/P8-20P-C(01)
PS-187(GR)
Bias
HV
CN1
DVREM

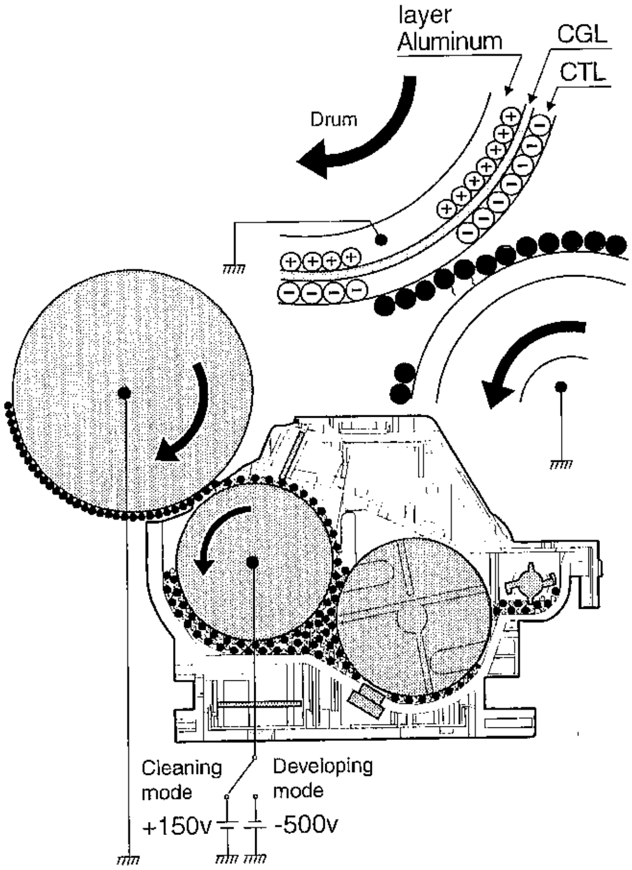
Code	Signal name	Name	Function/Operation	Type	Model	Note
HUS-DV	HUS-DV	Developing humidity sensor	Developing section peripheral humidity detection	Humidity sensor		Analog detector
TCS	TCS	Toner density sensor	Toner density detection	Magnetic sensor		Analog detector
▲ TH-DV	TH-DV	Developing humidity sensor	Developing section humidity detection	Thermistor		Analog detector
DVM	DVM	Developing motor	Drives the developing section.	DC brushless motor		
Bias	Bias	Developing bias	High voltage for developing bias			

No.	Name	Operation
1	Developing roller	Forms magnetic brush with developer and put toner on the OPC drum.
2	DV doctor	Keeps the height of the magnetic brush on the developing roller at a fixed level.
3	Mixing roller	Mixes developer (carrier and toner) and charges toner negatively.
4	DV earth plate	Earth plate for DV unit
5	AG roller	Mixes toner supplied from the toner hopper, and supplies toner to the DV box evenly.

C. Operational descriptions

Electrostatic latent images formed on the OPC drum by the LED (writing) unit (LED image light) are converted into visible images by toner.

⚠



Toner in the developing unit is stirred by the mixing roller.

When toner is stirred, it is negatively charged by mechanical friction.

The developing bias voltage (negative) is applied to the developing roller.

Negatively charged toner is attracted and attached to the area on the OPC drum where negative voltage is reduced by exposure.

On the other hand, the negative voltage at an area where exposure is not made is higher than the developing bias voltage, and toner is not attached.

⚠ : Feb. 6 2004

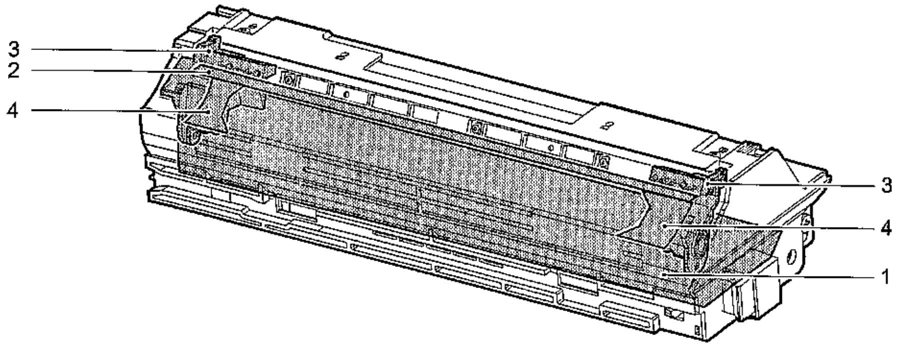
D. Maintenance and parts replacement

(1) Maintenance list

✕: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace Δ: Adjust ☆: Lubricate ❑: Shift position

⚠

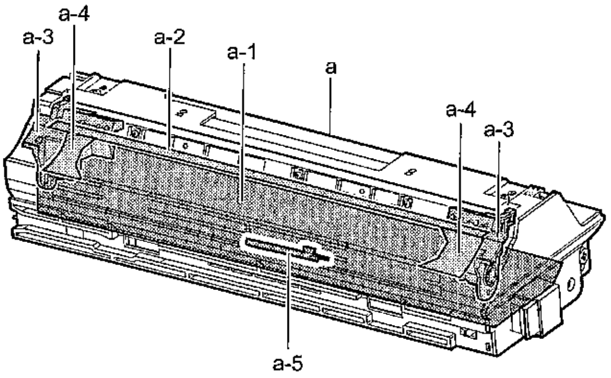
		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N, AR-M700U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Developing section	1	Developer		▲	▲	▲	▲	▲	▲	▲	▲	Supply when installing
	2	DV seal		▲	▲	▲	▲	▲	▲	▲	▲	
	3	MG holder F/R	○	○	○	○	○	○	○	○	○	
	4	Side seal F/R		▲	▲	▲	▲	▲	▲	▲	▲	



(2) Maintenance and parts replacement

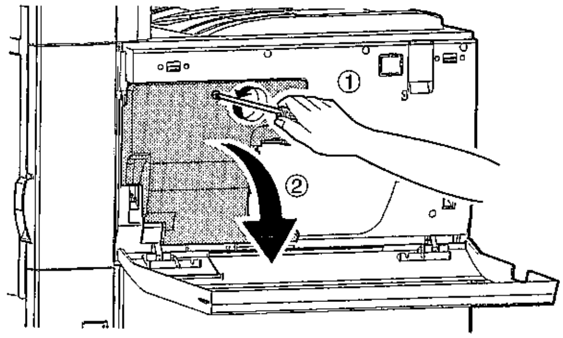
(List of Replacement Parts)

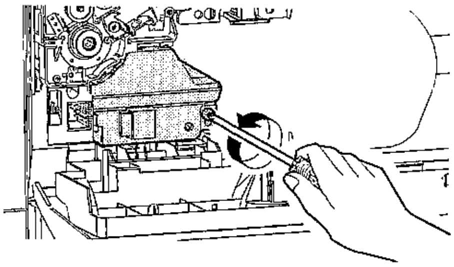
No.	Unit	Parts		
a	Developing unit	1	Developer	▲
		2	DV seal	▲
		3	MG holders F and R	○
		4	Side seals F and R	▲
		5	Toner concentration sensor	

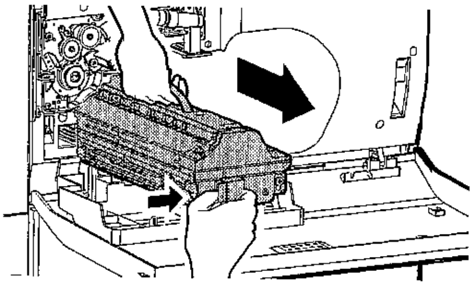


a. Developing unit

1) Take out the developing tank.

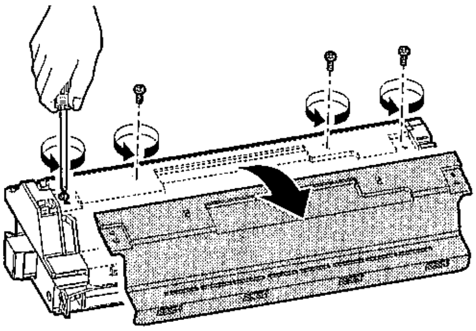




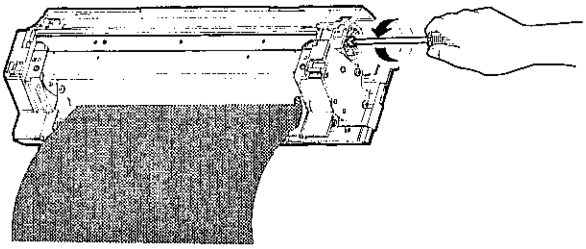


a-1. Developer

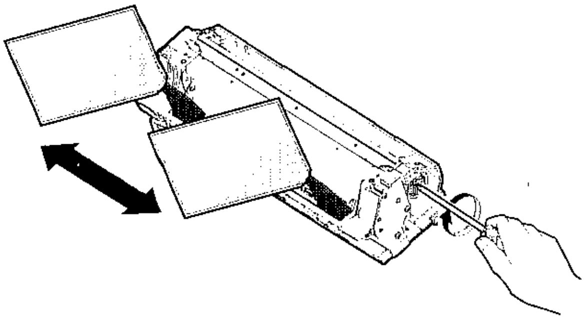
1) Take out the developing tank. (See "a. Developing unit" in this section)
2) Remove the DV cover.



3) Turning the MG roller, take out the old developer.

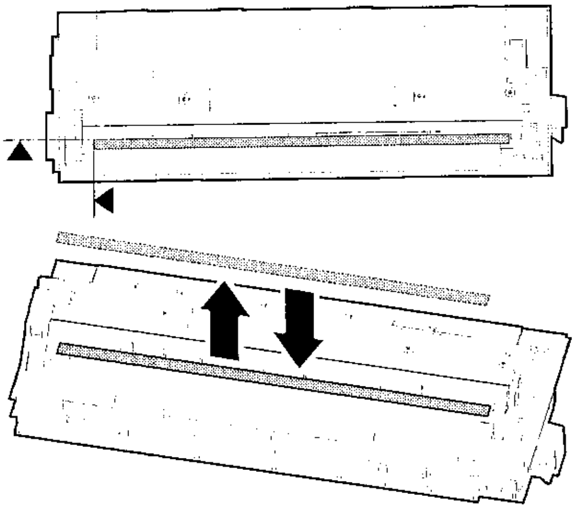


4) Insert the new developer.



a-2. DV seal

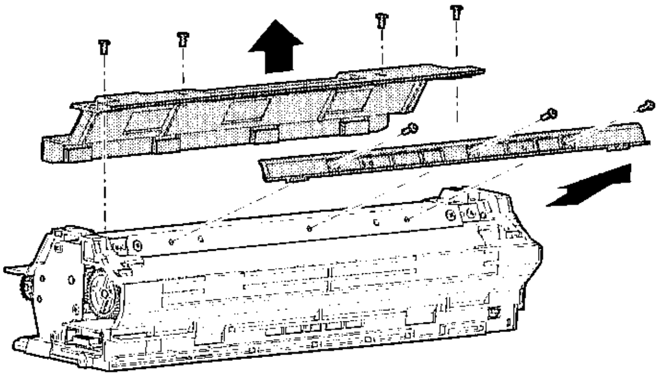
1) Take out the developing tank. (See "a. Developing unit" in this section)
2) Take out the old DV seal.



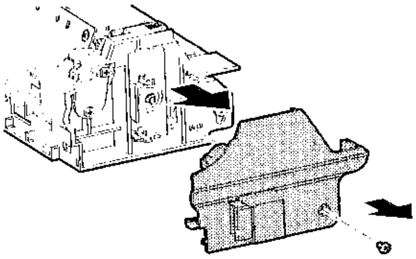
3) Wipe the sealing face with alcohol.
4) Affix the new DV seal at the reference position.

a-3. MG holders F and R

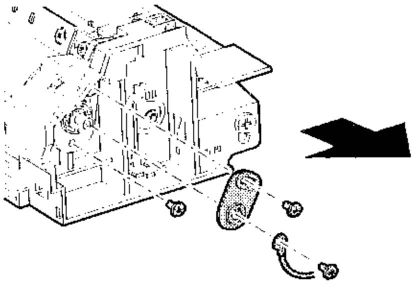
1) Take out the developing tank. (See "a. Developing unit" in this section)
2) Remove the DV cover. (See "a-1. Developer" in this section)
3) Remove the doctor cover.



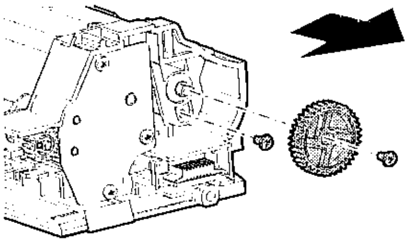
4) Remove the DV cover front.



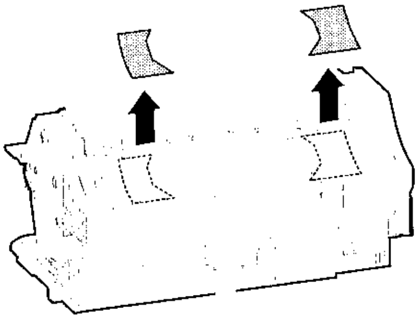
5) Remove the bias line and main pole position adjusting plate and screws.



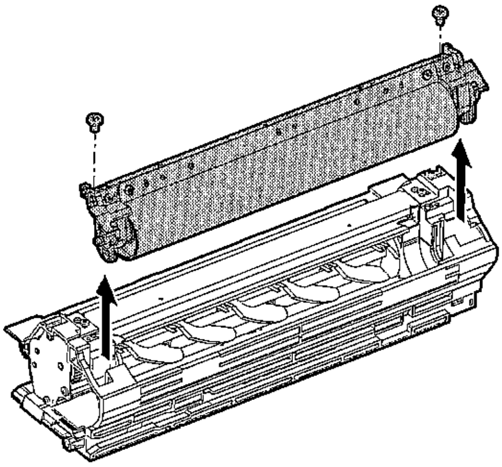
6) Remove the MG gear and screws.



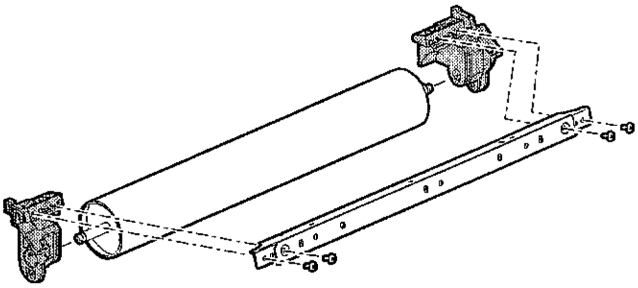
7) Remove the side seals F and R.



8) Remove the MG roller unit.



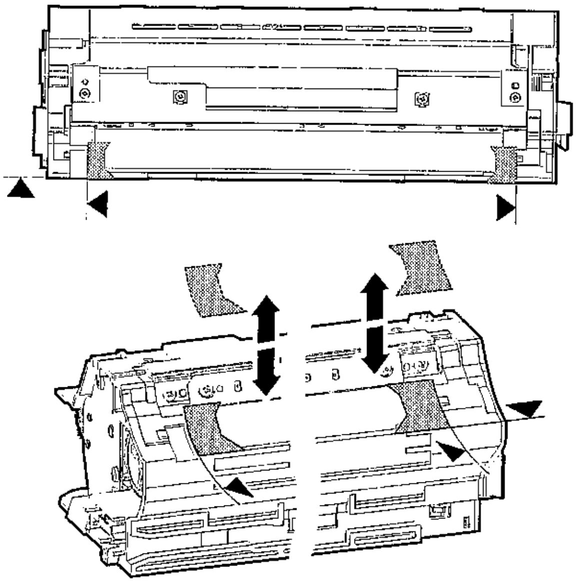
9) Remove the doctor attaching plate.



10) Remove the MG holders F and R.

a-4. Side Seals F and R

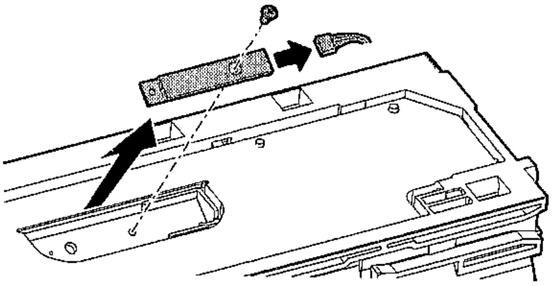
1) Take out the developing tank.
2) Remove the doctor cover.
3) Peel off the right and left side seals.



4) Clean the peeled area.
5) Peel off the new right and left seals from the mounting paper and affix in the designated positions.

a-5. Toner concentration sensor

1) Remove the developing tank. (See "a. Developing unit" in this section)
2) Remove the DV cover. (See "a-1. Developer" in this section)
3) Remove the toner concentration sensor.

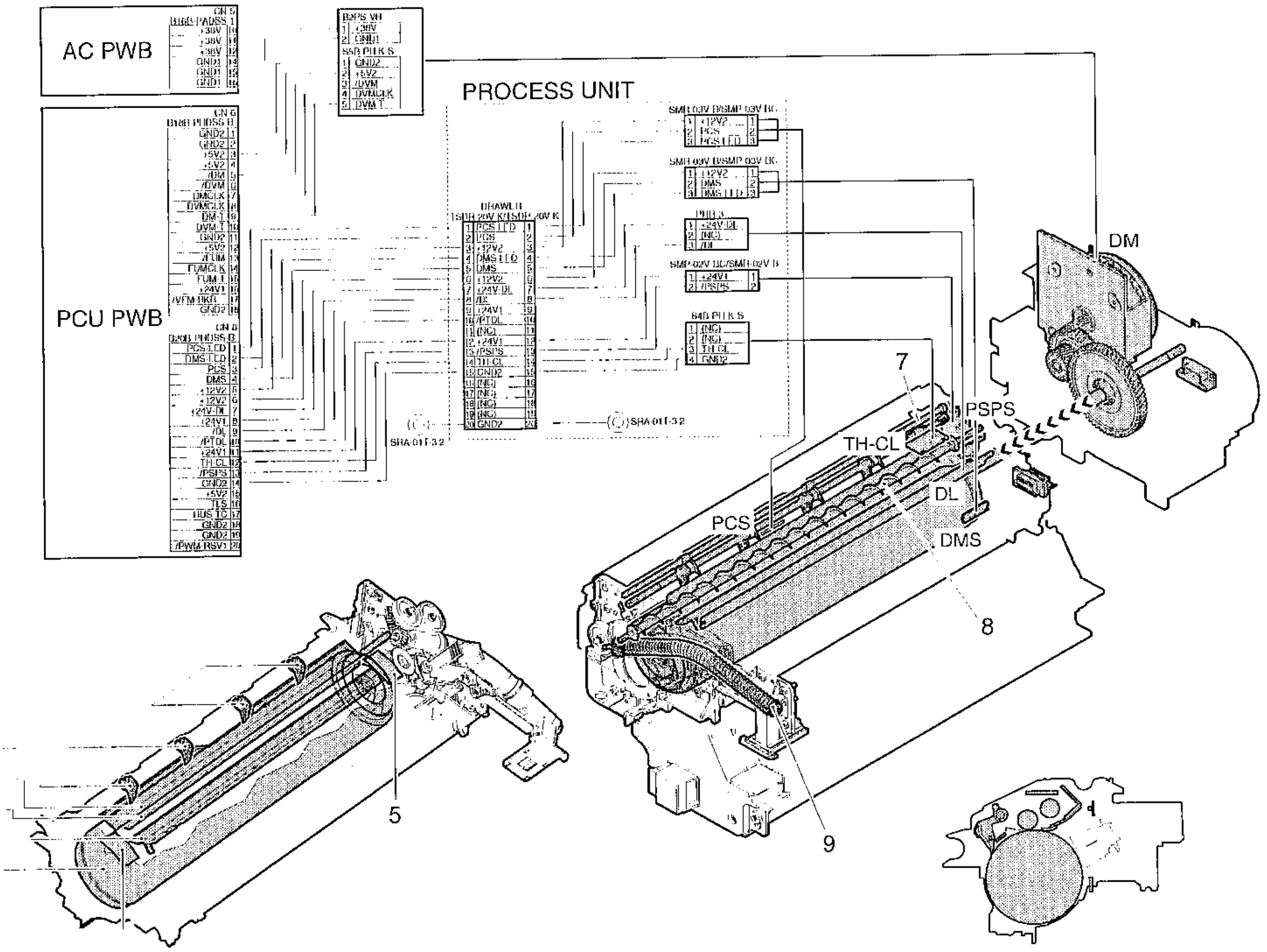


[OPC drum section]

A. General

In this section, laser beams are radiated to the OPC drum surface which was negatively charged, making electrostatic latent images.

B. Major parts and signal functions


AC PWB
CN 5
B16B-PADSS-1
+38V
+38V
+38V
GND1
GND1
GND1
PCU PWB
CN 6
B18B-PHDSS-B
GND2
GND2
+5V2
+5V2
/DM
/DVM
DMCLK
DVMCLK
DM-T
DVM-T
GND2
+5V2
/FUM
FUMCLK
FUM-T
+24V1
/VFM-BKR
GND2
CN 8
B20B-PHDSS-B
PCS-LED
DMS-LED
PCS
DMS
+12V2
+12V2
+24V-DL
+24V1
/DL
/PTDL
+24V1
TH-CL
/PSPS
GND2
+5V2
TLS
HUS-TC
GND2
GND2
/PWM-RSV1
B2PS-VH
+38V
GND1
S5B-PH-K-S
GND2
+5V2
/DVM
DVMCLK
DVM-T
PROCESS UNIT
DRAWER
TSDR-20V-K/TSDP-20V-K
PCS-LED
PCS
+12V2
DMS-LED
DMS
+12V2
+24V-DL
/DL
+24V1
/PTDL
(NC)
+24V1
/PSPS
TH-CL
GND2
(NC)
(NC)
(NC)
(NC)
GND2
SRA-01T-3.2
SMR-03V-B/SMP-03V-BC
+12V2
PCS
PCS-LED
SMR-03V-B/SMP-03V-BC
+12V2
DMS
DMS-LED
PHR-3
+24V-DL
(NC)
/DL
SMP-02V-BC/SMR-02V-B
+24V1
/PSPS
S4B-PH-K-S
(NC)
(NC)
TH-CL
GND2
SRA-01T-3.2
DM
7
PSPS
TH-CL
DL
PCS
DMS
8
9
6
4
3
2
1
5

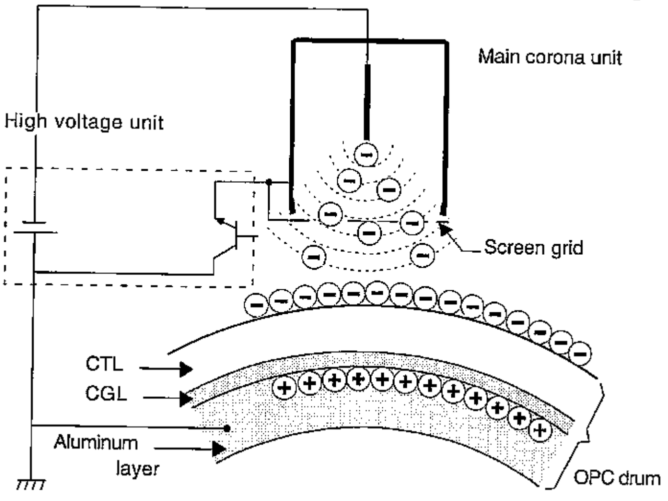
Code	Signal name	Name	Function/Operation	Type	Model	Note
DMS	DMS	OPC drum marking sensor signal	OPC drum mark detection	Reflection type		Analog detector
PCS	PCS	Image density sensor	Detection of density of toner patch on the OPC drum	Reflection type		Analog detector
TH-CL	TH-CL	OPC drum cleaner temperature sensor	OPC drum cleaner peripheral temperature detection	Thermistor		Analog detector
DM	DM	OPC drum motor	Drives the OPC drum and the transfer section.	DC brushless motor		
PSPS	PSPS	Drum separation pawl solenoid	Drives the OPC drum separation pawl	Solenoid		
DL	DL	Discharge lamp	Discharges electric charges on the OPC drum.	Lamp		

No.	Name	Operation
1	OPC drum	Forms electrostatic latent images by laser beams.
2	Cleaning blade	Cleans remaining toner on the OPC drum.
3	CL brush roller	Cleans remaining toner on the OPC drum.
4	Sub blade (Cleaning seal)	Prevent against toner leakage from the cleaner section.
5	Side seal F, R	Prevents against toner dispersion.
6	Drum separation pawl	Separates paper from the drum.
7	Separation pawl oscillation shaft	Moves in the front and rear frame direction to install the separation pawl.
8	Waste toner transport screw	Transports toner from the cleaner unit to the waste toner transport pipe.
9	Waste toner transport pipe	Transports toner from the cleaner unit to the waste toner box in the toner cartridge front section.

C. Operational descriptions

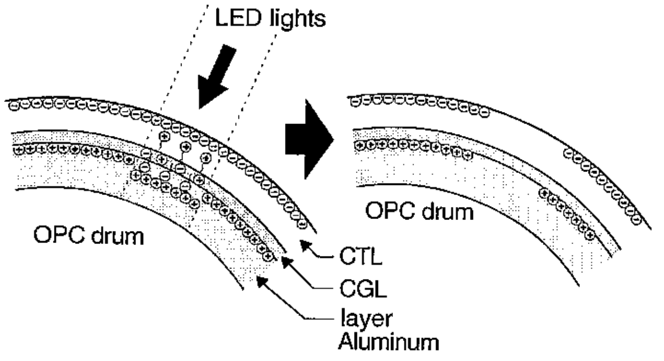
The OPC drum surface is negatively charged by the main charger. The laser beam images are radiated to the OPC drum surface by the laser unit to form latent electrostatic images.

1) The OPC drum surface is negatively charged by the main charger.



The main charger grid is provided with the screen grid. The OPC drum is charged at a voltage virtually same as the voltage applied to the screen grid.

2) LED lights are radiated to the OPC drum surface by the laser unit to form latent electrostatic images.



When LED lights are radiated to the OPC drum CGL, negative and positive charges are generated.

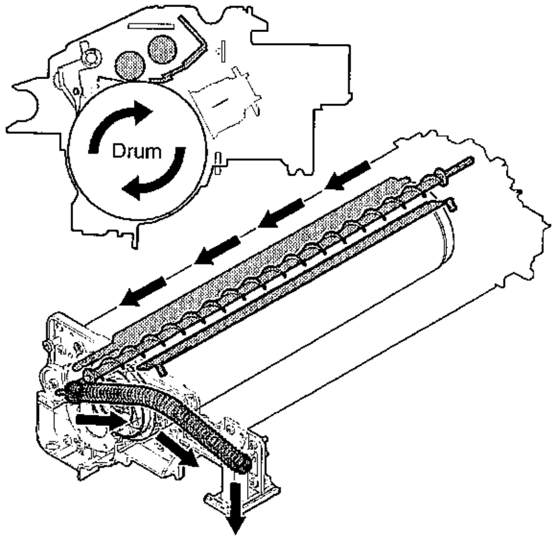
Positive charges generated in CGL are attracted to the negative charges on the OPC drum surface. On the other hand, negative charges are attracted to the positive charges in the OPC drum aluminum layer.

Therefore, positive charges and negative charges are balanced out on the OPC drum and in the aluminum layer, reducing positive and negative charges to decrease the OPC drum surface voltage.

Electric charges remain at a position where LED lights are not radiated.

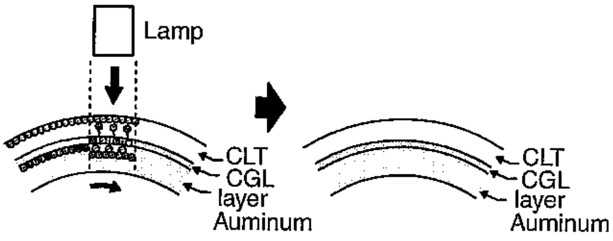
As a result, latent electrostatic images are formed on the OPC drum surface.

3) After transfer operation, remaining toner is removed by the cleaning blade.



Toner removed from the OPC drum surface is transported to the waste toner section in the toner cartridge by the waste toner transport screw.

4) The whole surface of the OPC drum is discharged.

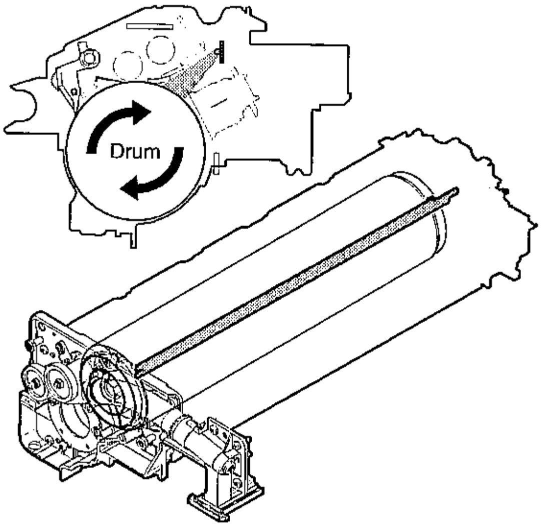


By radiating the discharge lamp light to the discharge lens, light is radiated through the lens to the OPC drum surface.

When the discharge lamp light is radiated to the OPC drum CGL, positive and negative charges are generated.

Positive charges generated in CGL are attracted to the negative charges on the OPC drum surface. On the other hand, negative charges are attracted to positive charges in the aluminum layer of the OPC drum.

Therefore, positive and negative charges are balanced out on the OPC drum surface and in the aluminum layer, reducing positive and negative charged to decrease the surface voltage of the OPC drum.



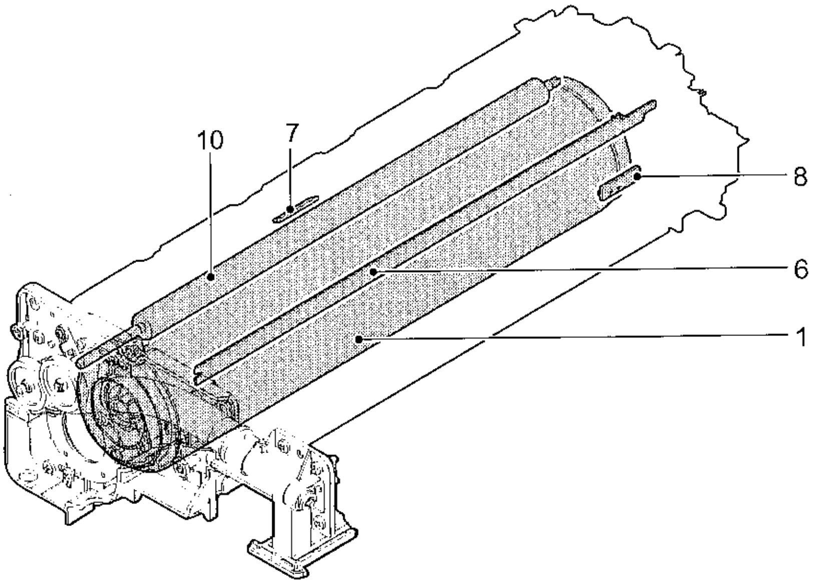
▲1 : Feb. 6 2004

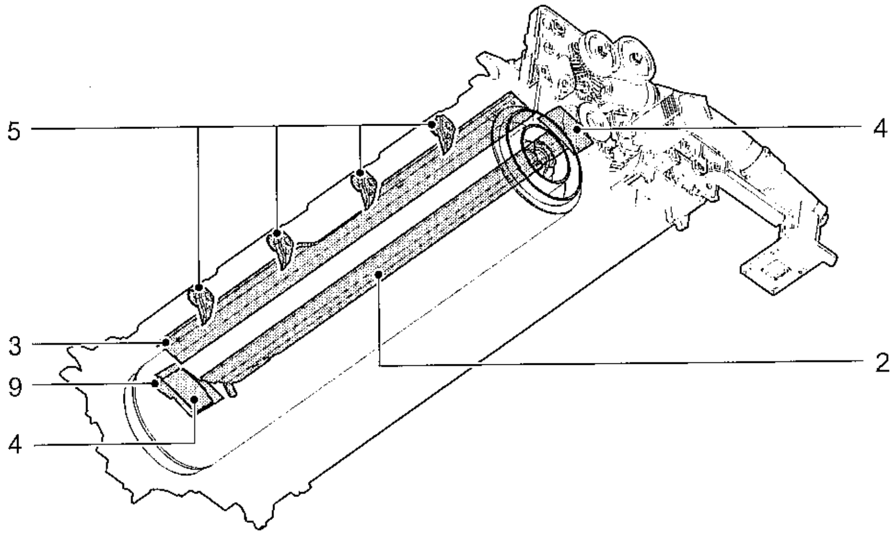
D. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift position

		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N, AR-M700U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Drum peripheral section	1	Drum	×	▲	▲	▲	▲	▲	▲	▲	▲	
	2	Cleaning blade	×	▲	▲	▲	▲	▲	▲	▲	▲	
	3	Toner reception seal	×	▲	▲	▲	▲	▲	▲	▲	▲	
	4	Side seal F/R	×	▲	▲	▲	▲	▲	▲	▲	▲	
	5	Drum separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	
	6	Discharge lamp	×	○	○	○	○	○	○	○	○	
	7	Image density sensor	×	○	○	○	○	○	○	○	○	
	8	OPC drum marking sensor	×	○	○	○	○	○	○	○	○	
	9	Side seal R base sheet		×	▲	×	▲	×	▲	×	▲	
	10	Cleaning brush	×	×	×	×	×	×	×	×	×	





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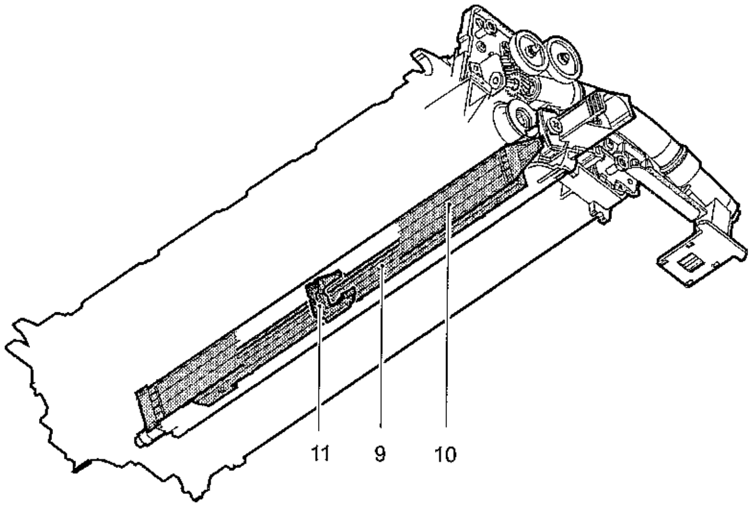
⚠1

		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N, AR-M700U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Drum peripheral section	9	Sawtooth	○	▲	▲	▲	▲	▲	▲	▲	▲	
	10	Screen grid	×	▲	▲	▲	▲	▲	▲	▲	▲	
	11	MC cleaner		▲	▲	▲	▲	▲	▲	▲	▲	



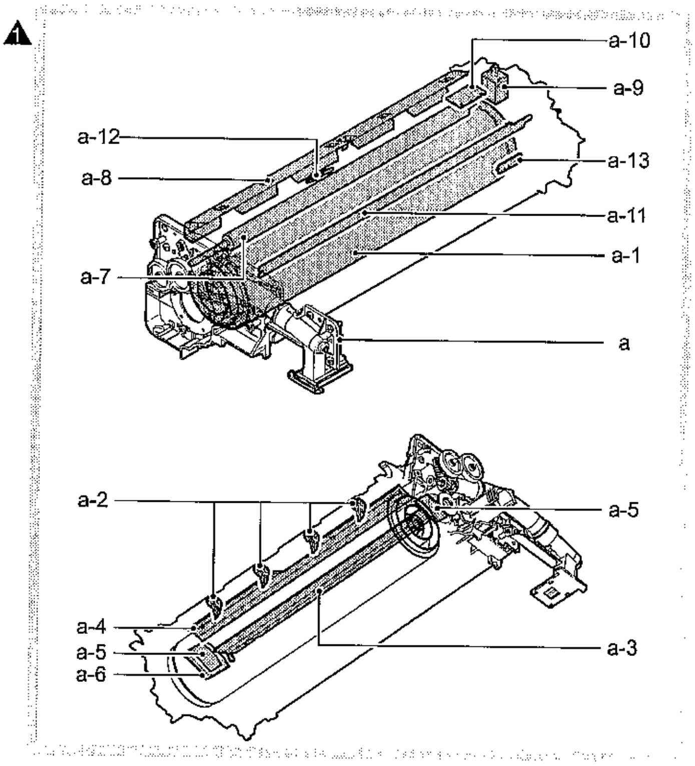
(2) Maintenance and parts replacement

(List of Replacement Parts)

⚠1

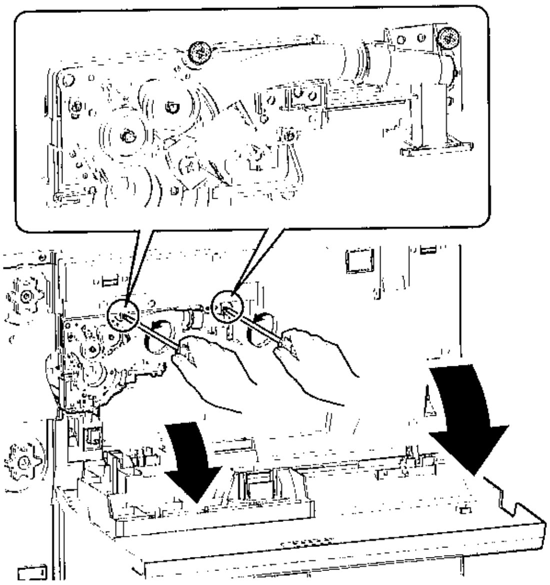
No.	Unit	Parts		
a	Process unit	1	OPC drum	×▲
		2	Separation pawl	×▲
		3	Cleaning blade	×▲
		4	Toner receiving seal	×▲
		5	Side seal F/R	▲
		6	Side seal R base sheet	▲
		7	Cleaning brush	×
		8	Process adsorption plate	×○
		9	Drum separation pawl solenoid	
		10	OPC drum cleaner temperature sensor	
		11	Discharge lamp	×○
		12	Image density sensor	×○
		13	OPC drum marking sensor	×○

⚠1

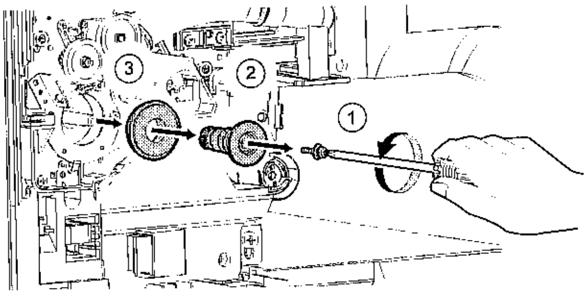


a. Process unit

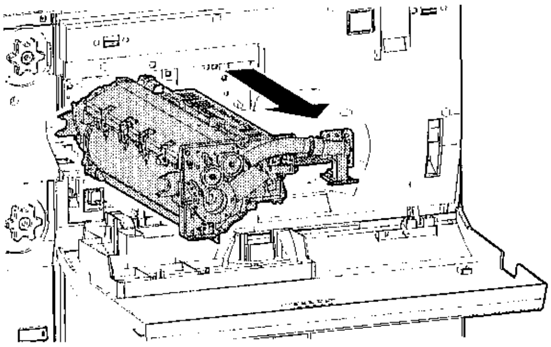
1) Open the front door.



2) Open the process cover.
3) Open the left door.
4) Remove the MC charger unit.
5) Remove the blue screw.
6) Unfix the drum to remove the bearing.

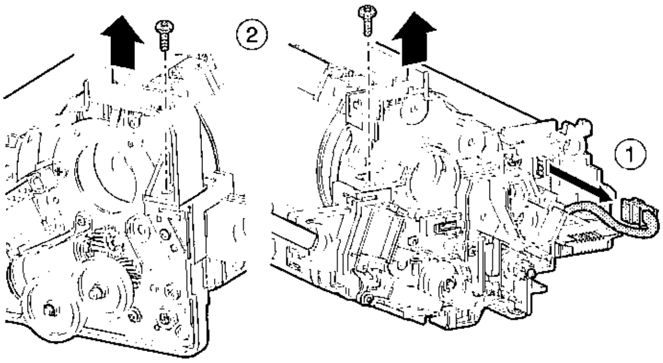


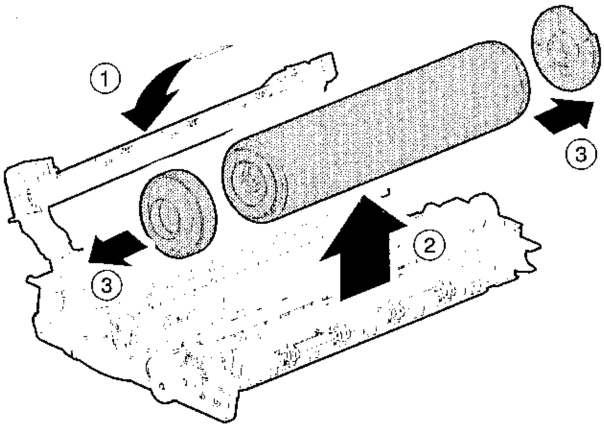
7) Pull out the process unit by clasping the bolt head.



a-1. OPC drum

1) Disconnect the connectors.



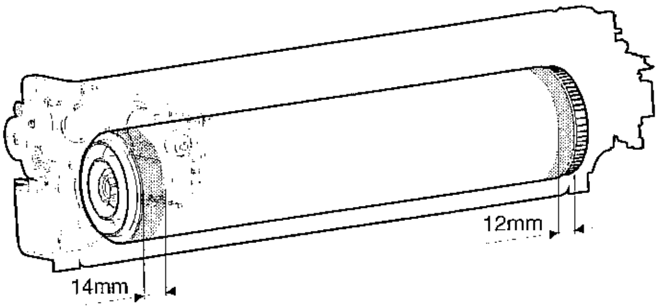


2) Remove the blue screw to open the lower frame.
3) Gently remove the drum, guide and all.
4) Remove the guide.

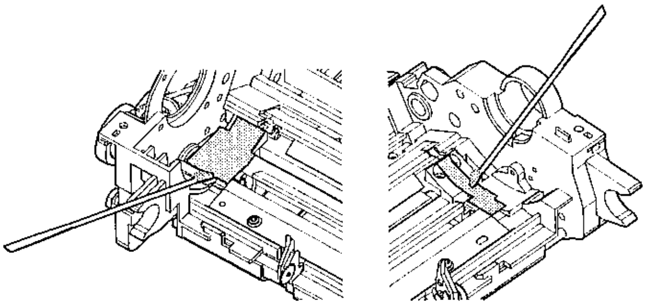
NOTE:

(OPC layer break-off on both sides of the OPC drum)

The OPC layer of a certain area of the OPC drum may break off due to rotational friction. The OPC layer break-off generated in the area shown below will not affect print images. Therefore, the drum can be used without replacement.

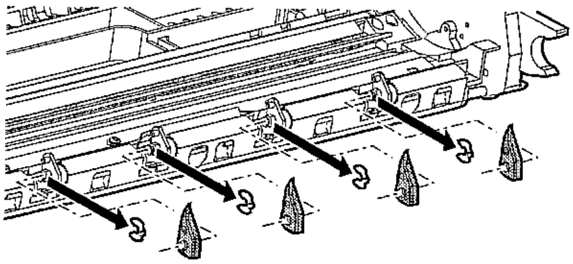


▲ NOTE: When replacing the OPC drum, apply friction-reducing powder (UKOG-0309FCZZ) to all over the drum (F and R) in order to reduce friction and membrane decrease of the OPC layer on both sides of the OPC drum. (Use PARTEL (UKOG-0311FCZZ).)



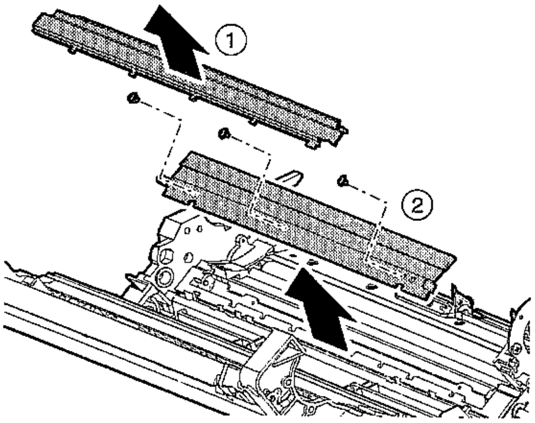
a-2. Separation pawl

1) Remove the OPC drum. (See "a-1. OPC drum" in this section)
2) Remove the plastic E-ring.
3) Remove the separation pawl.



a-3. Cleaning blade

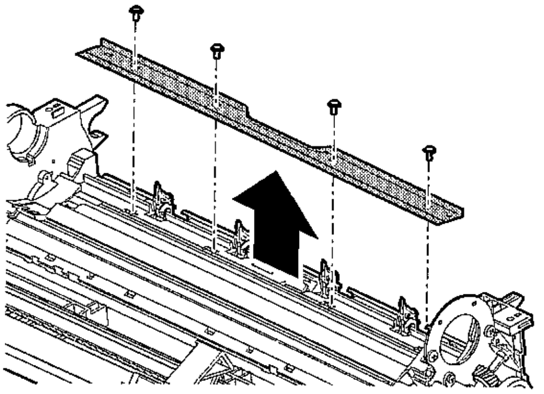
1) Remove the OPC drum. (See "a-1. OPC drum" in this section)
2) Remove the cover.



3) Remove the cleaning blade.

a-4. Toner receiving seal

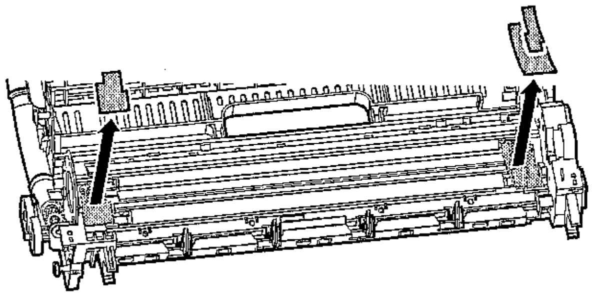
1) Remove the OPC drum. (See "a-1. OPC drum" in this section)
2) Remove the toner receiving seal.



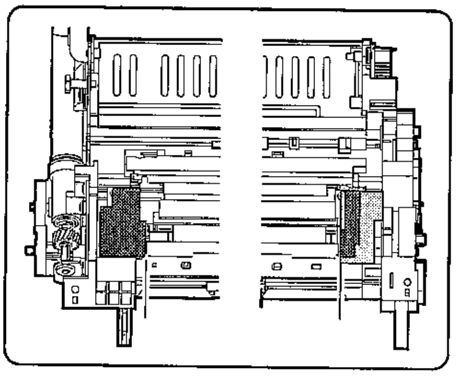
⚠ a-5. Side seal F/R

a-6. Side seal R base sheet

1) Remove the OPC drum unit. (See "a-1. OPC drum" in this section)
2) Remove the side seal R base sheet.

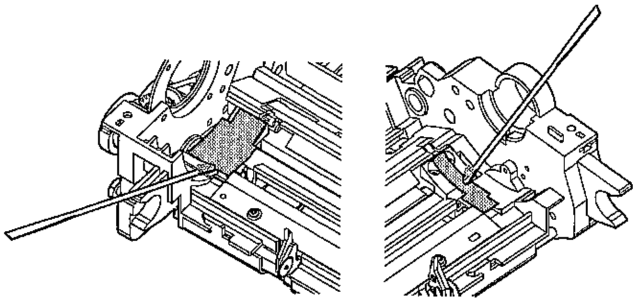


3) Attach the side seal R base sheet to the specified position. Attach the side seals F/R to the specified positions.



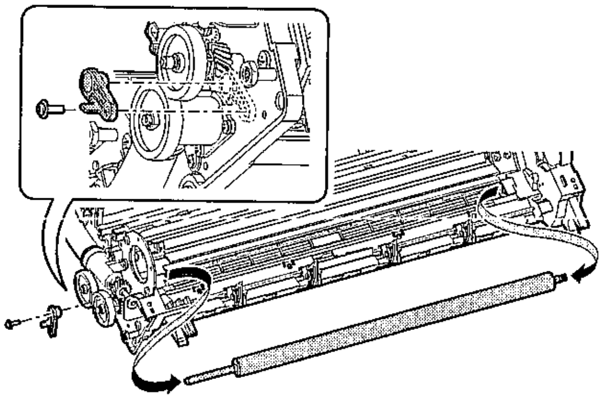
NOTE: Clean and remove toner and dust from the attachment section with alcohol.

NOTE: When replacing the side seals F/R, apply friction-reducing powder (UKOG-0309FCZZ) to all over the side seals F/R in order to reduce friction and membrane decrease of the OPC layer on both sides of the OPC drum. (Use PARTEL (UKOG-0311FCZZ).)



a-6. Brush roller

1) Remove the OPC drum. (See "a-1. OPC drum" in this section)
2) Remove the toner receiving seal.
3) Remove the blue screw to remove the lever.



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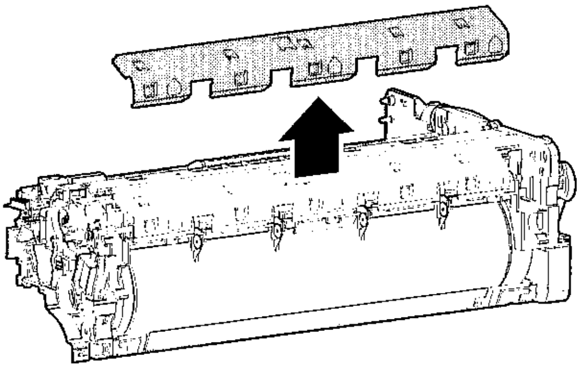
4) Remove the brush roller.

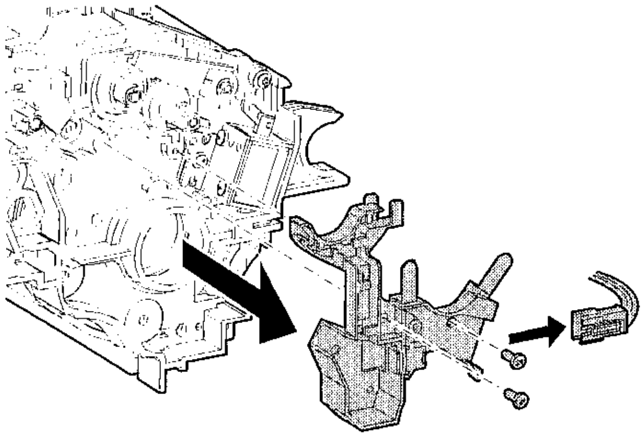
a-7. Process adsorption plate

1) Remove the drum unit.
2) Remove the cover to remove the adsorption plate.

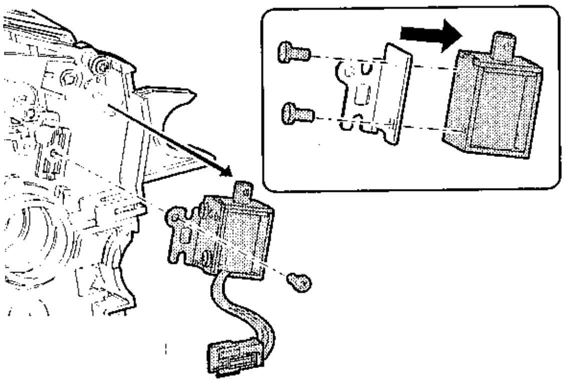


a-8. Drum separation pawl solenoid

1) Disconnect the connector, and remove the harness guide unit.

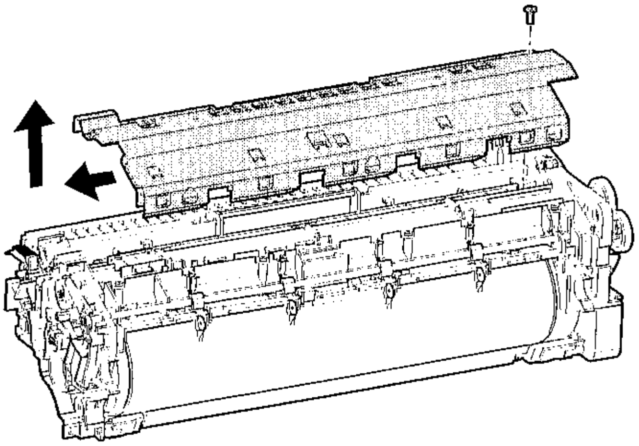


2) Remove the drum separation pawl solenoid.

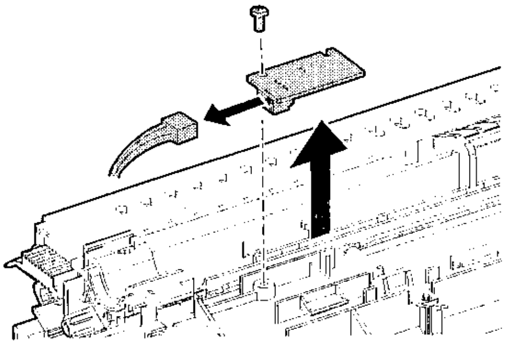


a-9. OPC drum cleaner temperature sensor

1) Remove the upper cover.



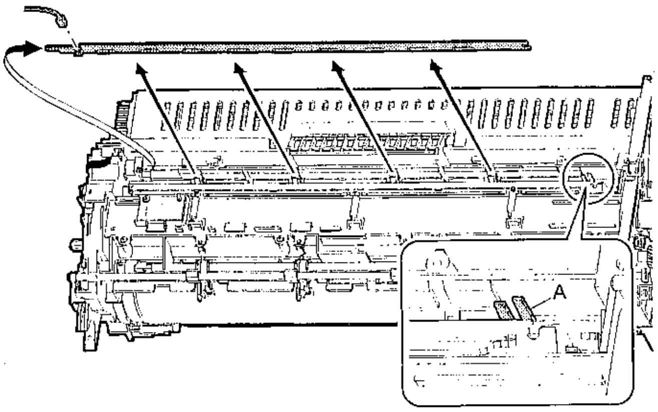
2) Remove the OPC drum cleaner temperature sensor.



a-10. Discharge lamp

1) Remove the upper cover. (See "a-9. OPC drum cleaner temperature sensor" in this section)
2) Remove the discharge lamp.

⚠



* Be careful not to break the pawl when fixing.

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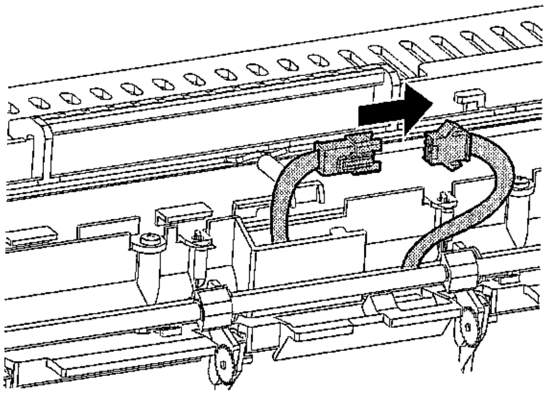
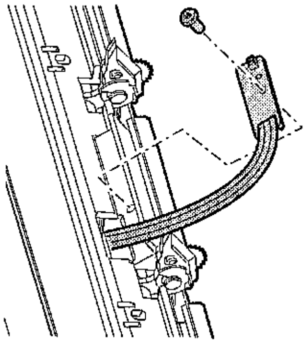
a-11. Image density sensor

1) Remove the upper cover. (See "a-9. OPC drum cleaner temperature sensor" in this section)
2) Disconnect the connector.



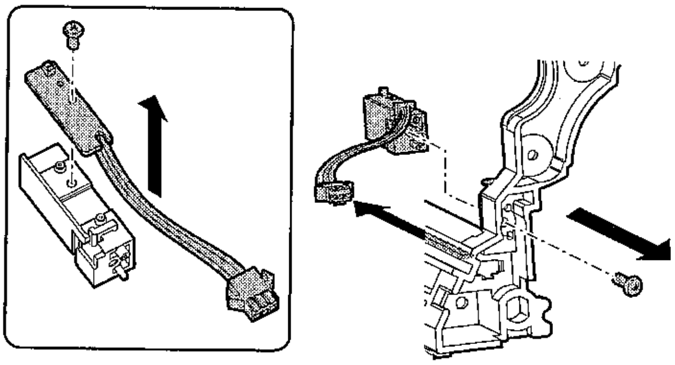
3) Remove the OPC drum unit. (See "a-1. OPC drum" in this section)
4) Remove the image density sensor.



a-12. OPC drum marking sensor

1) Remove the OPC drum unit. (See "a-1. OPC drum" in this section)
2) Remove the OPC drum marking sensor.

⚠ NOTE: Execute cleaning.



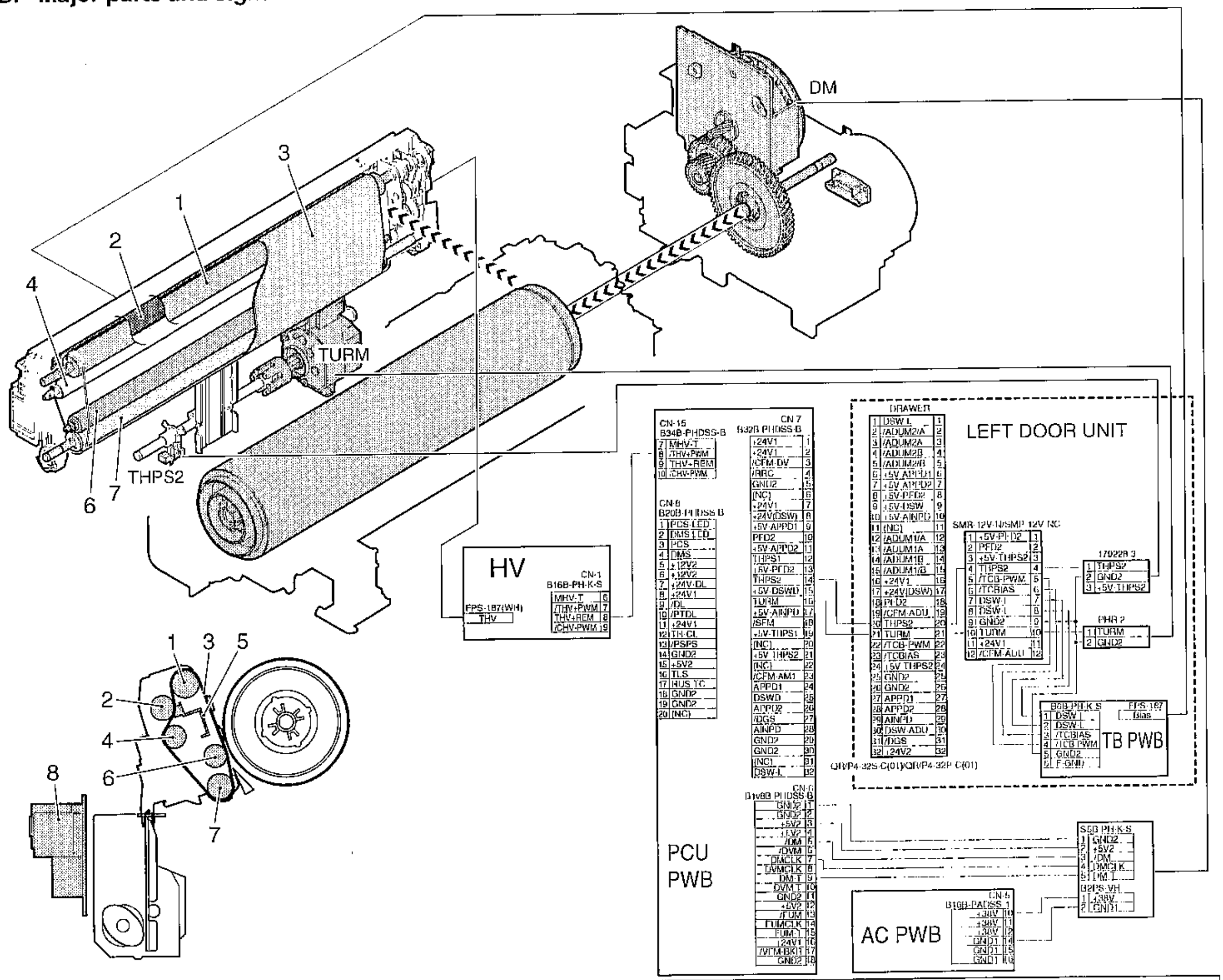
▲ : Feb. 6 2004

[Transfer section]

A. General

In this section, toner images on the OPC drum are transferred to paper.

B. Major parts and signal functions



Code	Signal name	Name	Function/Operation	Type	Note
DM	DM	OPC drum motor	Drives the OPC drum and the transfer section.	DC brushless motor	
TURM	TURM	Transfer separation motor	Drives and separates the transfer belt.	DC brush motor	The transfer belt is pressed on the OPC drum only during printing.
THPS2	THPS2	Transfer belt contact/separation home position sensor 2	Transfer belt separation home position detection 2	Transmission type	Not used.
THV	THV	Transfer high voltage	High voltage for transfer		
HUS-TC	HUS-TC	Process humidity sensor	Process peripheral humidity detection	Humidity sensor	Analog detector (Not used)

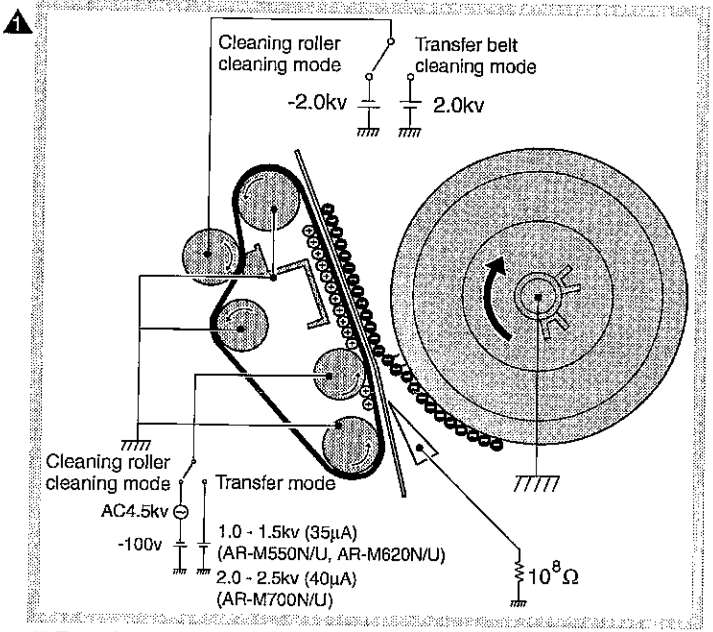
No.	Name	Operation
▲ 1	Transfer drive roller (Drive)	Drives the transfer belt.
2	Transfer cleaning roller	Cleans the transfer belt.
3	Transfer belt	Transfers toner images from the OPC drum to paper.
4	Transfer tension roller	Applies a proper tension to the transfer belt.
5	Transfer belt discharge brush	Connects the transfer belt to the chassis ground.
6	Transfer roller	Applies a transfer voltage to the transfer belt.
7	Transfer auxiliary roller (Idle)	Helps to stretch the transfer belt.
8	Transfer (TCCL) bias high voltage PWB	Generates a bias voltage for the transfer cleaning roller in cleaning or in the print mode.

C. Operational descriptions

1) Toner image transfer

Toner images formed on the drum by the developing roller are transferred to paper by the transfer belt.

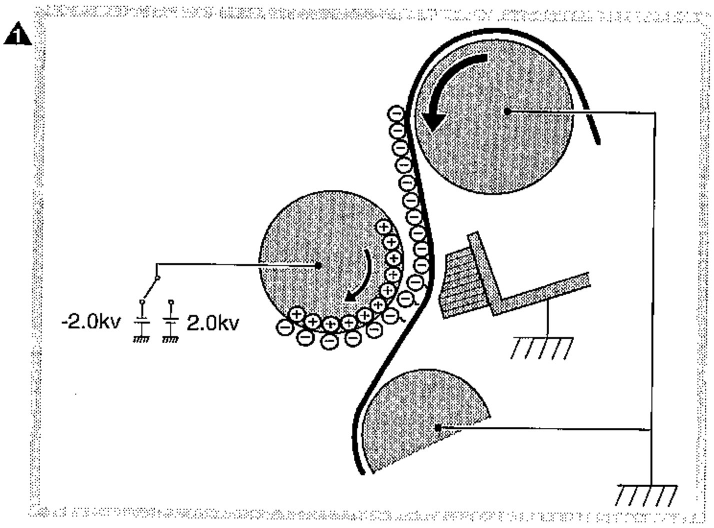
Toner on the drum is negatively charged by stirring in the developing unit. By applying a positive voltage to the transfer roller, the transfer belt and paper on the transfer belt are positively charged to transfer negatively charged toner images to paper.


Cleaning roller cleaning mode
Transfer belt cleaning mode
-2.0kv
2.0kv
Cleaning roller cleaning mode
Transfer mode
AC4.5kv
-100v
1.0 - 1.5kv (35μA) (AR-M550N/U, AR-M620N/U)
2.0 - 2.5kv (40μA) (AR-M700N/U)
10⁸Ω

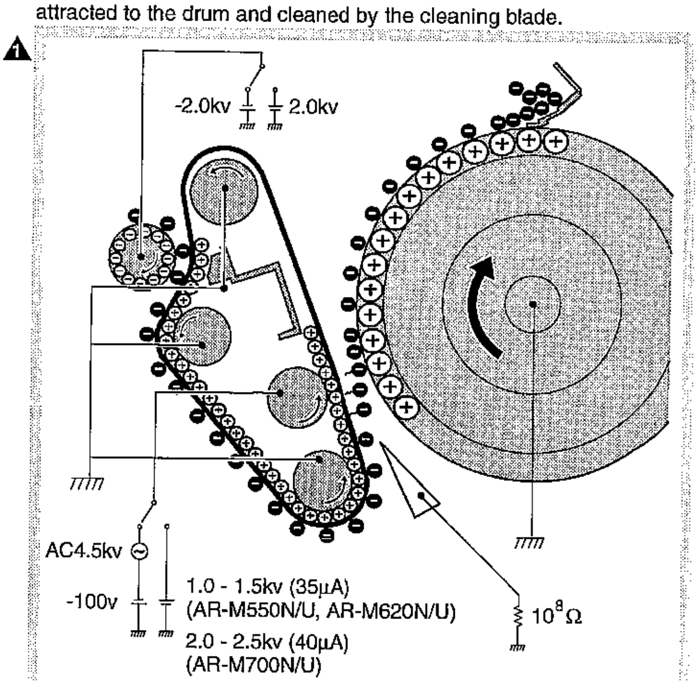
2) Transfer belt cleaning

During the job, a positive voltage is applied to the transfer cleaning roller so that negatively charged toner on the transfer belt is attracted to the cleaning roller.

(The brush on the back of the transfer belt is provided for increasing the cleaning effect.)



After completion of the job, the applied voltage to the transfer cleaning roller is switched to negative, and toner is returned from the transfer cleaning roller to the transfer belt, and toner on the transfer belt is attracted to the drum and cleaned by the cleaning blade.


-2.0kv
2.0kv
AC4.5kv
-100v
1.0 - 1.5kv (35μA) (AR-M550N/U, AR-M620N/U)
2.0 - 2.5kv (40μA) (AR-M700N/U)
10⁸Ω

Cleaning timing:

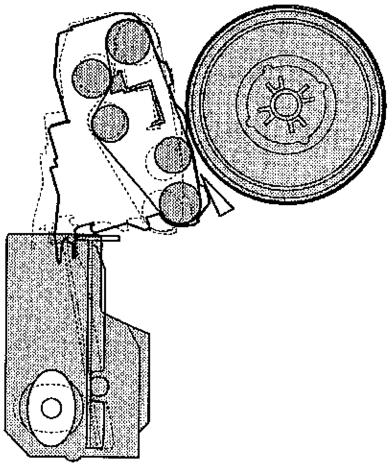
- After completion of the job
- When warming-up
- After canceling a jam
- After execution of process control

3) Transfer belt separation/contact

Transfer belt is separated by the transfer separation motor.

The transfer belt is in contact with the drum except for the following cases:

- When executing process control (to prevent against breakage of toner patch on the drum)
- When a jam occurs (Protection of the drum, left door open/close)
- When shipping (Protection of the drum. Separate with the simulation 6-1 (7).)



⚠ : Feb. 6 2004

D. Maintenance and parts replacement

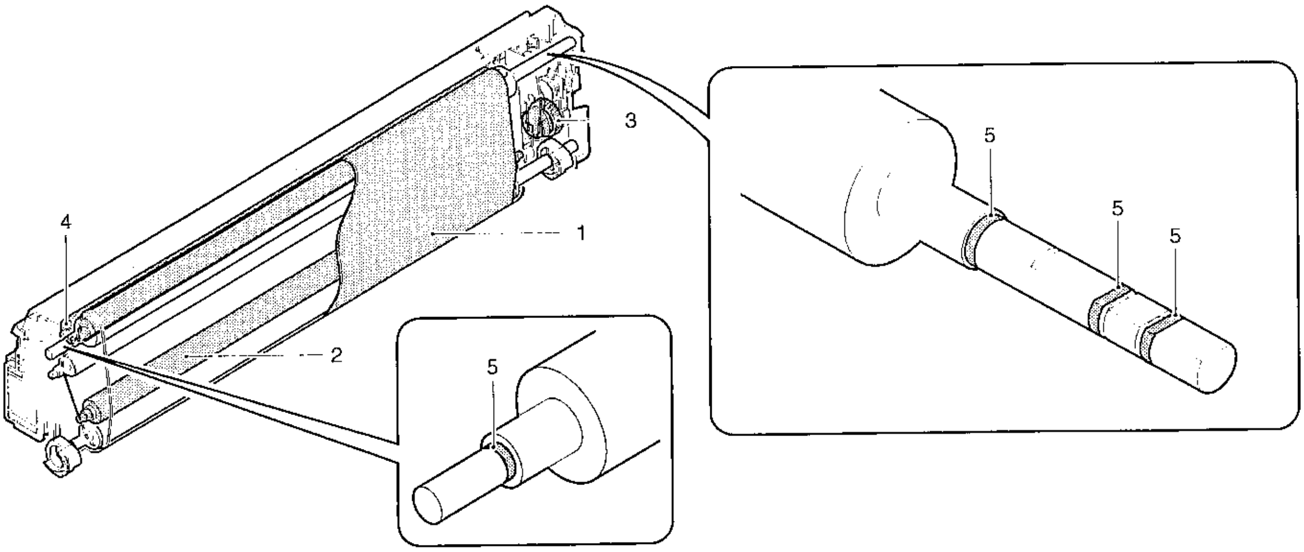
(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❑: Shift position

⚠		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N, AR-M700U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Transfer section	1	Transfer belt	○	▲	▲	▲	▲	▲	▲	▲	▲	
	2	Transfer roller		▲	▲	▲	▲	▲	▲	▲	▲	
	3	Transfer drive gear		▲	▲	▲	▲	▲	▲	▲	▲	
	4	Transfer cleaning roller		▲	▲	▲	▲	▲	▲	▲	▲	
	5	Shaft (Conduction grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0012QSZZ

⚠ * When cleaning the transfer belt, never use alcohol, solvent, and water.

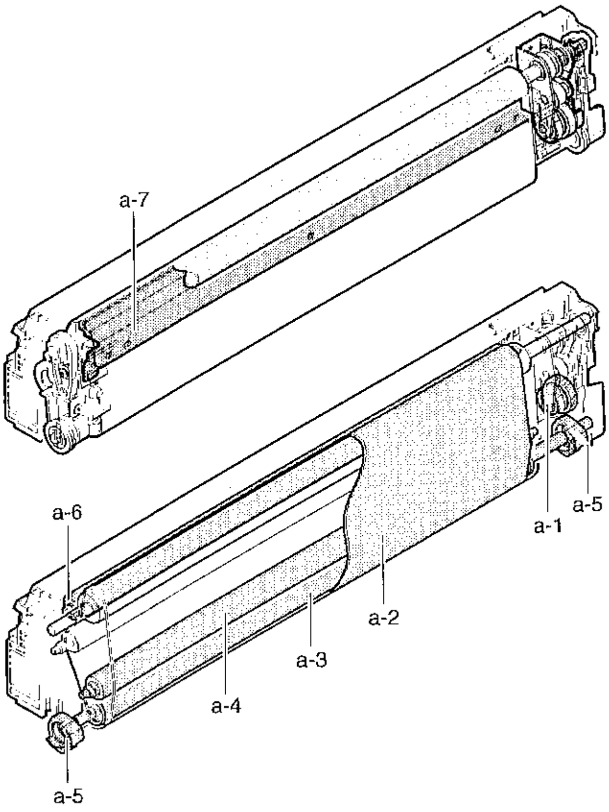
⚠



(2) Maintenance and parts replacement

(List of Replacement Parts)

No.	Unit	Parts		
⚠ a	Transfer unit	1	Transfer drive gear	▲
		2	Transfer belt	○▲
		3	Transfer auxiliary roller	
⚠		4	Transfer roller	▲
		5	Transfer roller collar	
		6	Transfer cleaning roller	▲
		7	Transfer cleaning brush	

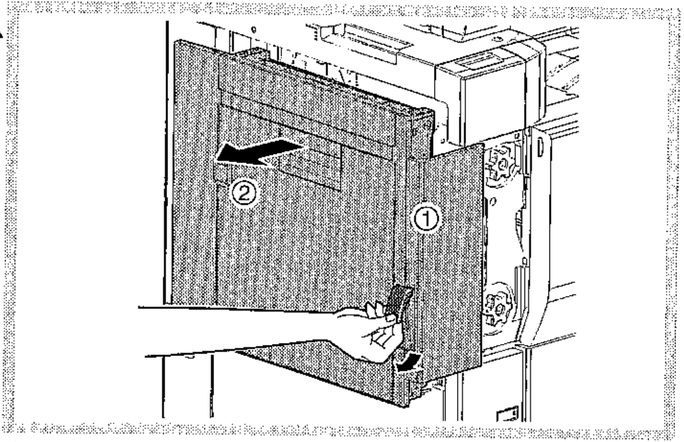


⚠: Feb. 6 2004

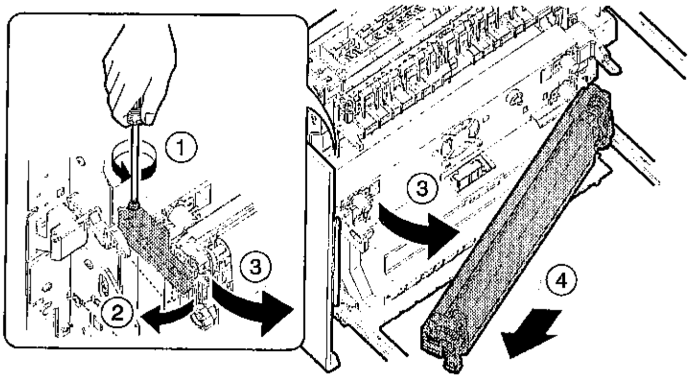
a. Transfer unit

1) Open the left door unit.

⚠

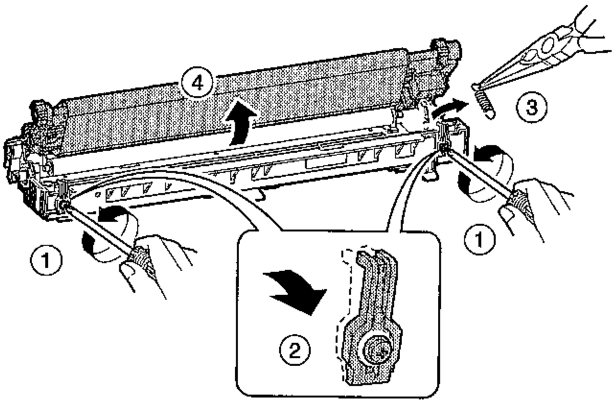


2) Loosen the blue screw and open the holder to remove the transfer unit.

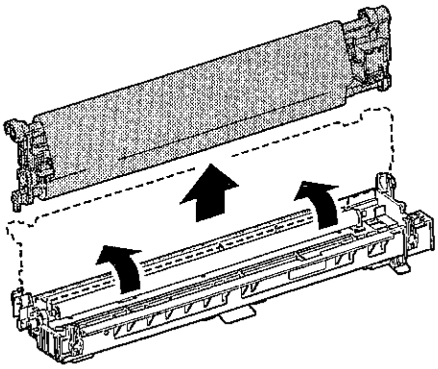


a-1. Transfer drive gear

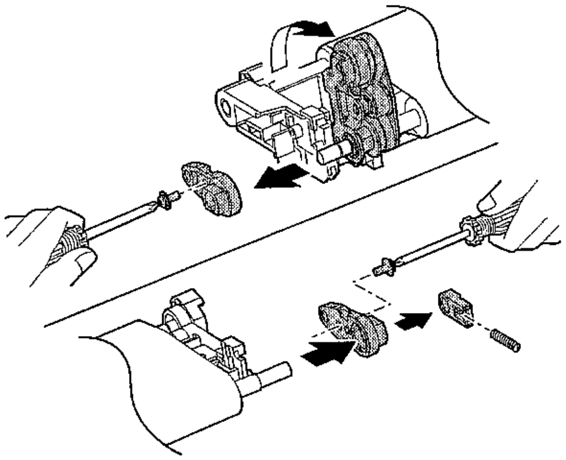
1) Remove the transfer unit. (See "a. Transfer unit" in this section)
2) Loosen the blue screw and unhook the hook lever in order to open the transfer belt unit in the arrowed direction.



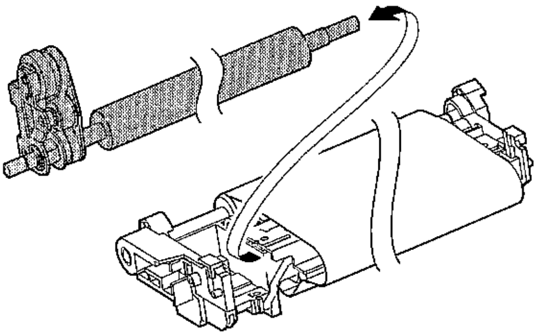
3) Remove the spring.
4) Remove the transfer belt unit in the arrowed direction.



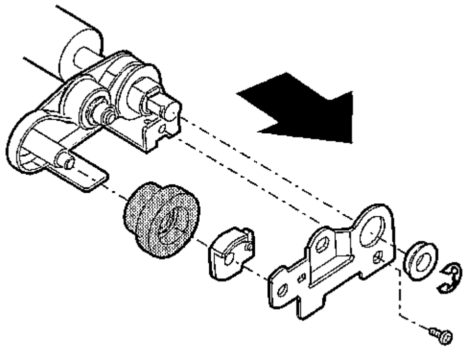
5) Remove the transfer belt unit. (See "a-1. Transfer drive gear" in this section)
6) Remove the ground members.



7) Remove the blue screw to remove the roller fixing members.
8) Pull out the upper transfer roller unit from the transfer belt.



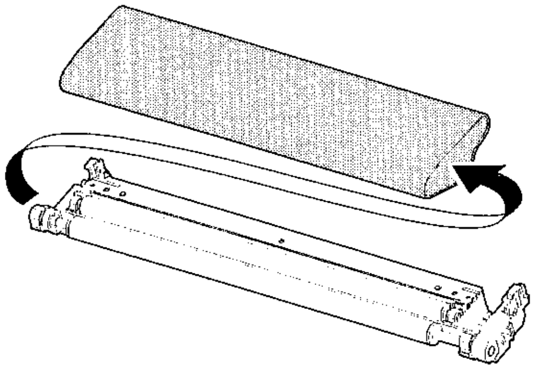
9) Remove the E-ring and screw to remove the transfer drum gear.



⚠ : Feb. 6 2004

a-2. Transfer belt

1) Remove the transfer unit. (See "a. Transfer unit" in this section)
2) Remove the transfer belt unit. (See "a-1. Transfer drive gear" in this section)
3) Remove the upper transfer roller unit.
4) Pull out the transfer belt.



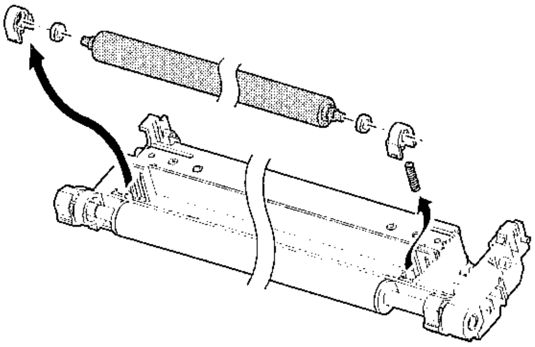
a-3. Transfer auxiliary roller

a-4. Transfer roller

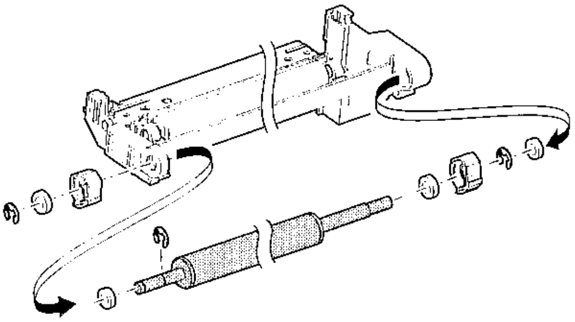
a-5. Transfer roller collar

1) Remove the transfer unit. (See "a. Transfer unit" in this section)
2) Remove the transfer belt unit. (See "a-1. Transfer drive gear" in this section)
3) Remove the upper transfer roller unit.
4) Remove the transfer belt. (See "a-2. Transfer belt" in this section)

⚠ 5) Remove the transfer tension roller bearing to remove the transfer roller.



6) Remove the E-ring to remove the transfer roller collar.

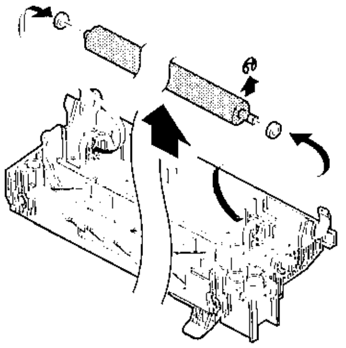


7) Remove the E-ring to remove the transfer roller transfer roller collar.

a-6. Transfer cleaning roller

1) Remove the transfer unit. (See "a. Transfer unit" in this section)
2) Remove the transfer belt unit. (See "a-1. Transfer drive gear" in this section)

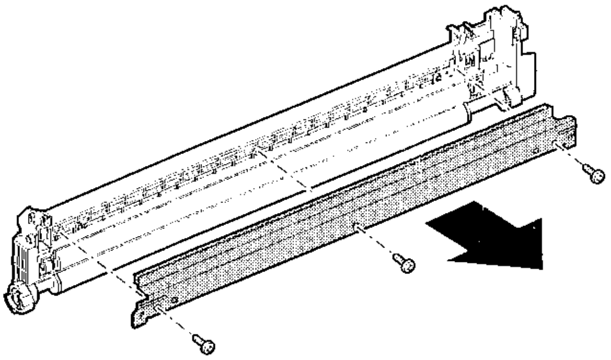
⚠ 3) Remove the E-ring to remove the transfer cleaning roller.



a-7. Transfer cleaning brush

1) Remove the transfer unit. (See "a. Transfer unit" in this section)
2) Remove the transfer belt unit. (See "a-1. Transfer drive gear" in this section)
3) Remove the upper transfer roller unit.
4) Remove the transfer belt. (See "a-2. Transfer belt" in this section)
5) Remove the cleaning brush.

⚠



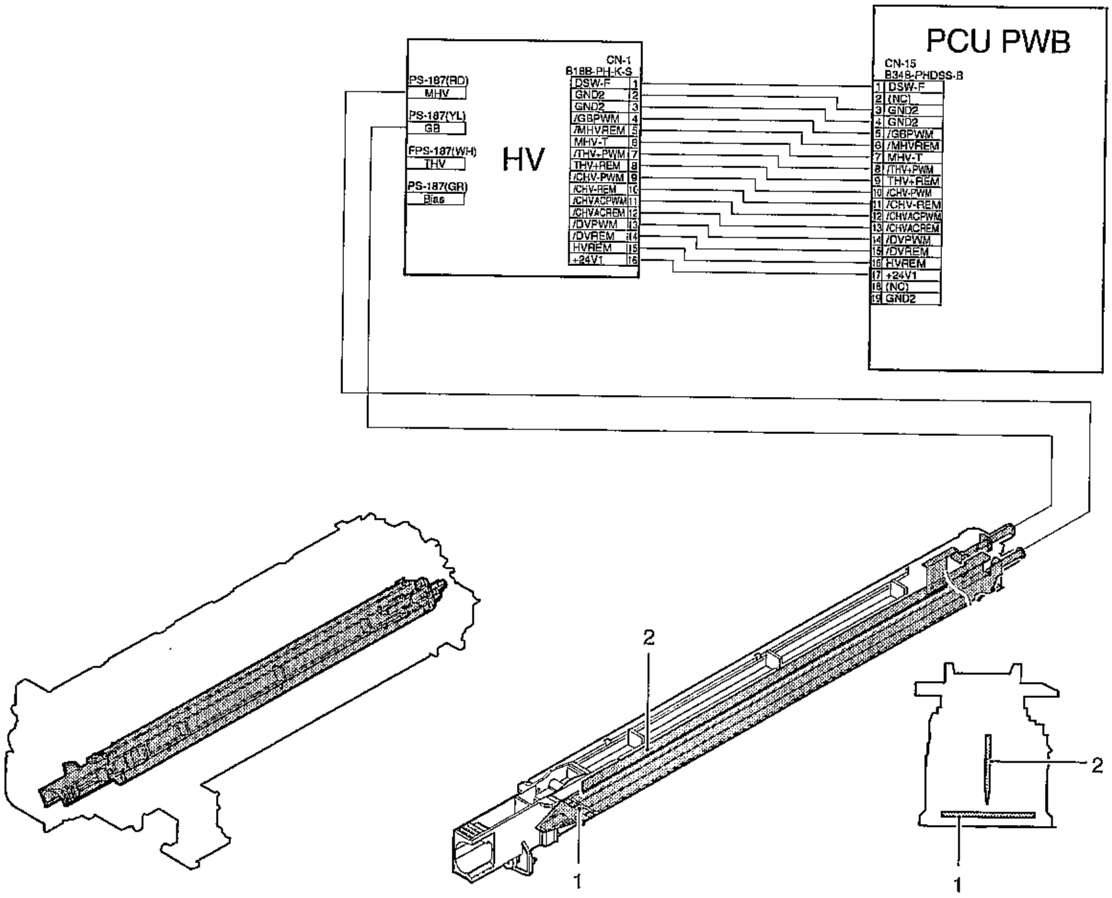
▲: Feb. 6 2004

[Main charger section]

A. General

The OPC drum surface is negatively charged in this section.

B. Major parts and signal functions


PCU PWB
CN-15
B34B-PHDSS-B
1 DSW-F
2 (NC)
3 GND2
4 GND2
5 /GBPWM
6 /MHVREM
7 MHV-T
8 /THV+PWM
9 THV+REM
10 /CHV-PWM
11 /CHV-REM
12 /CHVACPWM
13 /CHVACREM
14 /DVPWM
15 /DVREM
16 HVREM
17 +24V1
18 (NC)
19 GND2
HV
CN-1
B18B-PH-K-S
DSW-F 1
GND2 2
GND2 3
/GBPWM 4
/MHVREM 5
MHV-T 6
/THV+PWM 7
THV+REM 8
/CHV-PWM 9
/CHV-REM 10
/CHVACPWM 11
/CHVACREM 12
/DVPWM 13
/DVREM 14
HVREM 15
+24V1 16
PS-187(RD)
MHV
PS-187(YL)
GB
FPS-187(WH)
THV
PS-187(GR)
Bias
2
1
2
1

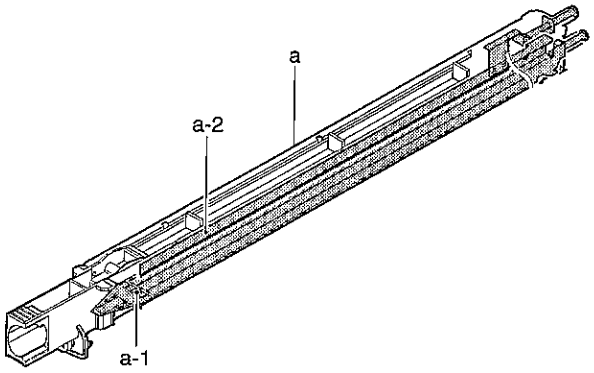
No.	Name	Operation
1	Screen grid	Charges the OPC drum evenly. / Charges the OPC drum.
▲ 2	Saw teeth plate	Charges the OPC drum.

C. Maintenance and parts replacement

(1) Maintenance and parts replacement

(Replacement parts)

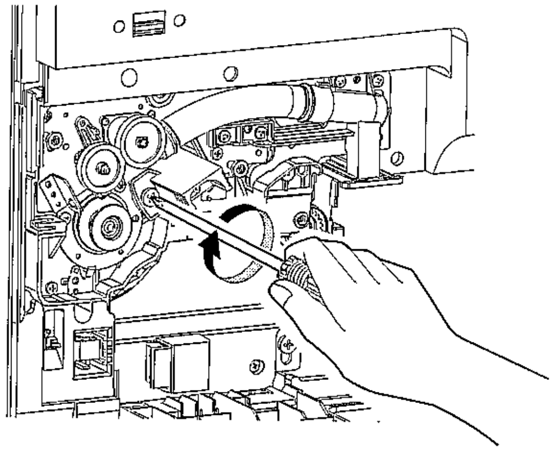
No.	Unit		Parts
a	Main charger unit	1	Screen grid
		2	Saw teeth plate
		3	MC cleaner



a. Main charger unit

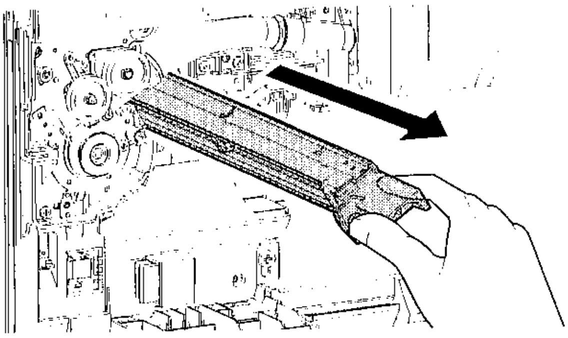
1) Remove the front door.

▲ 2) Loosen the blue screw.



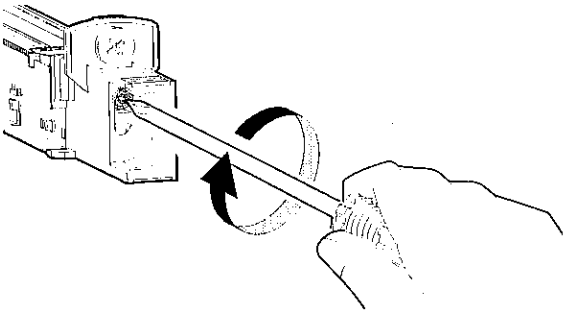
⚠ : Feb. 6 2004

4) Remove the main charger unit.

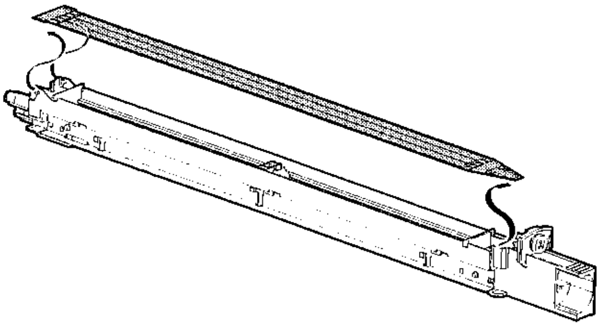


a-1. Screen grid

⚠ 1) Loosen the screw.

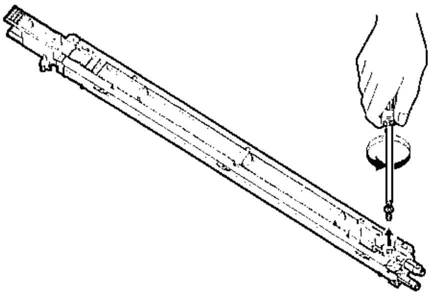


2) Remove the screen grid from the claw.

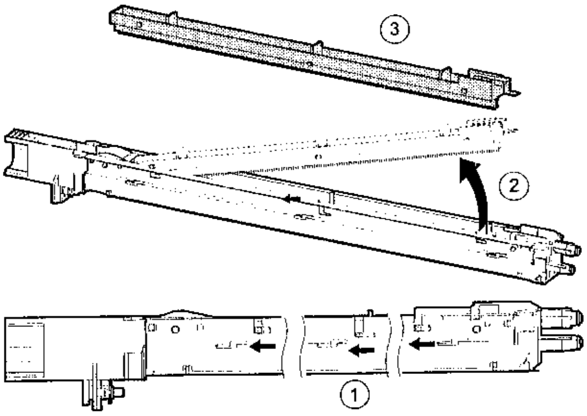


a-2. Saw teeth plate

1) Remove the blue screw.



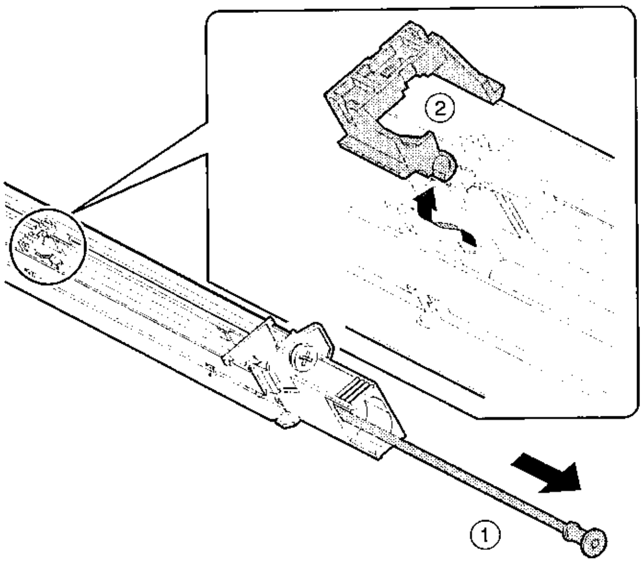
2) Lifting one end up, slide off the saw blade holder.



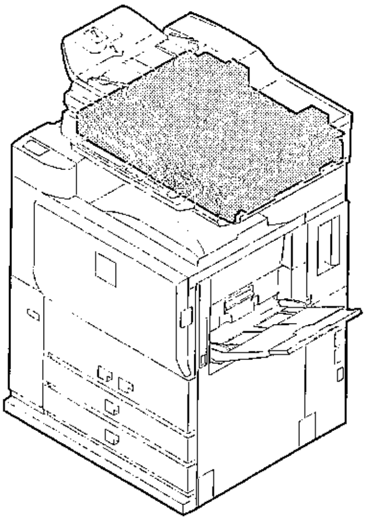
a-3. MC cleaner

1) Remove the screen grid. (See "a-1. Screen grid" in this section)
2) Remove the saw teeth plate.(See "a-2. Saw teeth plate" in this section)
3) Remove the MC cleaner.

⚠



5. Scanner section



A. General

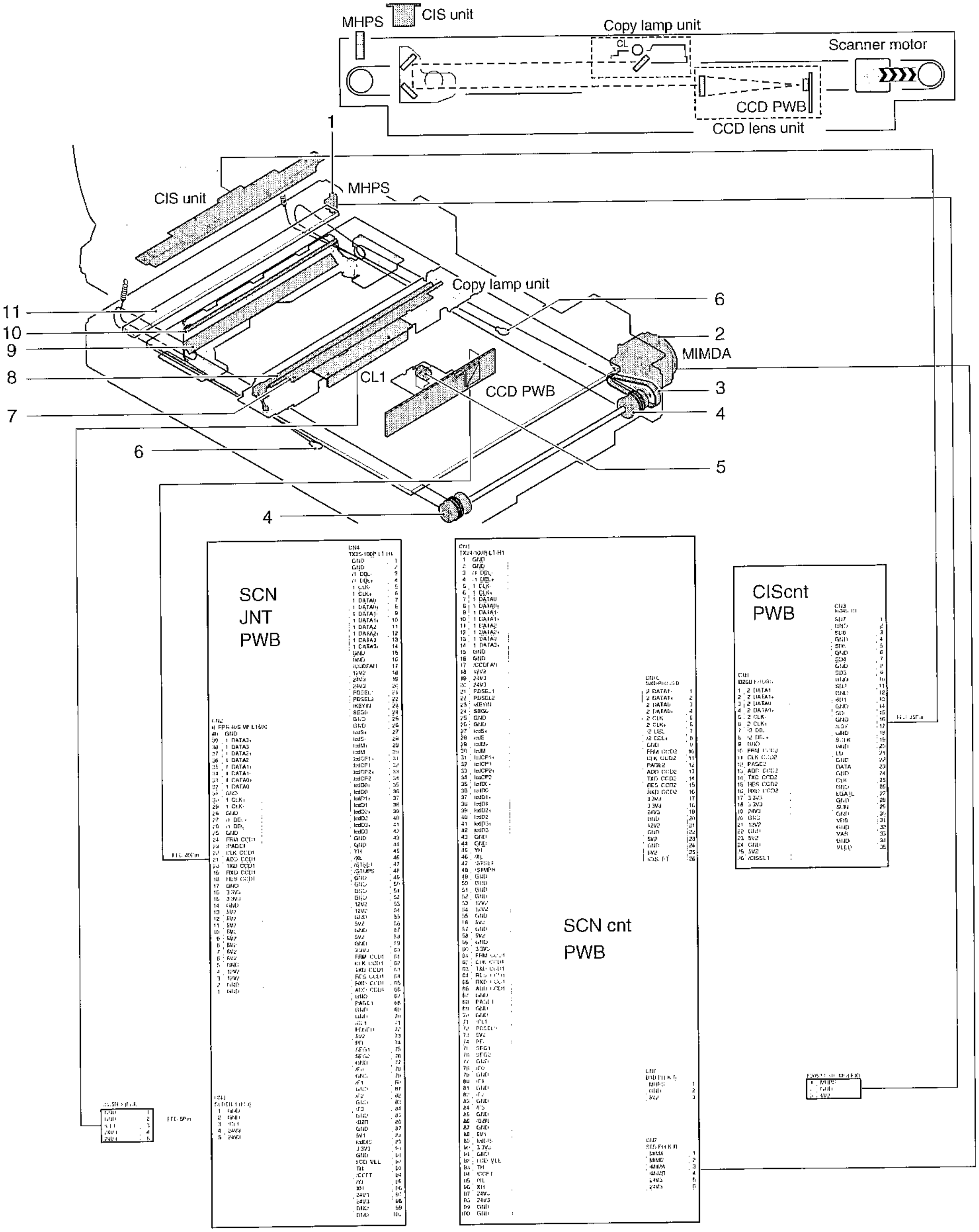
There are following three methods of scanning documents in this machine.

a. Place a document on the table glass. The copy lamp unit is operated to radiate copy lamp light onto the document, scanning the document with the CCD.

b. The SPF feeds a document. The copy lamp light is radiated onto the document which is stopped at the specified position and the document is scanned by the CCD.

c. The SPF feed a document. The LED light of the CIS unit which is attached to the SPF is radiated to the back of the document, and the document is scanned by the CIS.

B. Major parts and signal functions


MHPS
CIS unit
Copy lamp unit
CL
Scanner motor
CCD PWB
CCD lens unit
1
CIS unit
MHPS
Copy lamp unit
6
2
MIMDA
11
10
9
8
CL1
CCD PWB
3
4
7
6
5
4
SCN JNT PWB
CN4
TX25-100P-LT-H1
CN2
CN3
SCN cnt PWB
CN1
TX24-100R-LT-H1
CN6
CN5
CN7
CIScnt PWB
CN1
CN3
FFC 40Pin
FFC 5Pin

▲ : Feb. 6 2004

Code	Signal name	Name	Function/Operation	Type	Model	Note
MIM	MIM	Scanner (reading) motor	Drives the scanner (reading) section.	Stepping motor		
MHPS	MHPS	Scanner home position sensor detector	Scanner home position detection	Transmission type		Sensor
CIS unit		CIS unit	Contact-type image scan sensor unit Back document image scan			
CCD PWB		CCD PWB	Front document image scan (Document table/SPF mode) Converts the document images (optical signals) into electrical signals.			

No.	Name	Code, signal name	Function
1	Scanner home position sensor	MHPS	Scanner home position detection
2	Scanner (read) motor	/MIMDA	Drives the scanner (read) section.
3	Scanner drive belt		Transmits the scanner motor power to the scanner unit.
4	Pulley		Drives the scanner drive wire.
5	Lens		Reduces the document images (optical) and radiates them onto the CCD.
6	Scanner drive wire		Transmits the scanner motor power to the copy lamp unit and the mirror base unit.
7	Reflector		Converges the copy lamp lights.
8	Scanner lamp	CL1	Radiates lights onto the document. (Xenon lamp)
9	No. 3 mirror		Assures the optical path from No. 2 mirror to the CCD.
10	No. 2 mirror		Assures the optical path from No. 1 mirror to No. 3 mirror.
11	SPF (CIS) white balance sheet / SPF scan glass		The white reference sheet for scanning with the CIS unit.

C. Operational descriptions

(1) CCD/lens unit

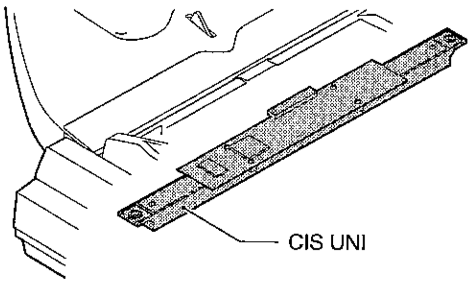
This machine employs the reduction optical-type line CCD (Charge Coupled Device) of scan resolution of 600dpi and 7400 pixels.

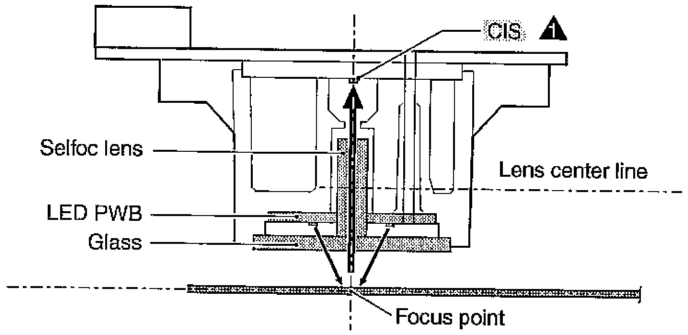
CCD scan is performed by shifting the scan positions sequentially by the carriage unit (lamp and mirror) scan or moving the document with the SPF. Lights reflected by the document are reflected by each mirror to form images on CCD elements through the reduction-type lens. The CCD converts the optical energy into electrical energy (analog). (Photoelectric conversion)

(2) CIS unit

The image sensor which scans back document images is attached to the SPF. The close-contact type image sensor (Contact Image Sensor) with scan resolution of 600dpi and 7196 pixels is employed.

For the CIS to scan documents, the scan position is sequentially shifted by shifting the document by the SPF, and the LED light in the unit is radiated to the back of the document, and photo energy is converted into electric energy (analog signal).



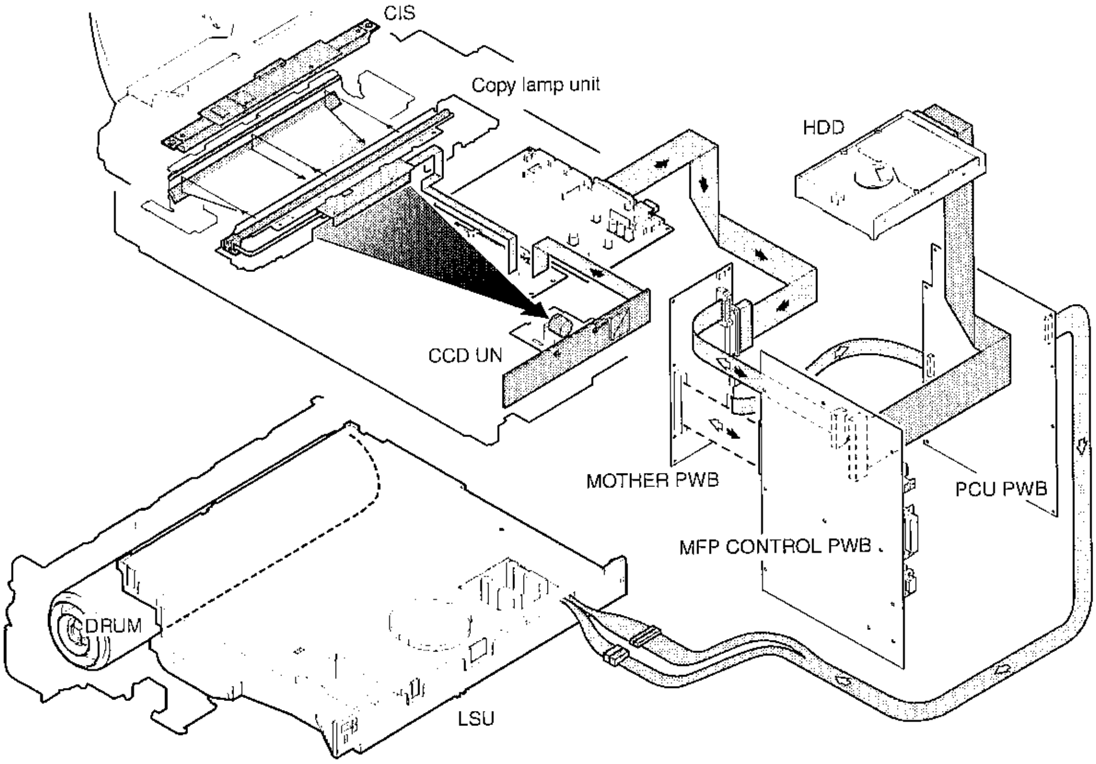


(3) Image signal flow

The image signal converted into electric energy (analog signal) is A-D converted on the CCD PWB. Image processes such as white balance and shading correction are performed on the scanner control PWB. The image signal is then sent through the mother board to the MFP control PWB.

In the MFP control PWB, image process is performed according to the setting content of the operation panel. The image data are converted into laser lighting signals (VIDEO signals), and sent through the mother PWB and the PCU to the LSU (Laser Scan Unit).

In the LSU, the VIDEO signals are converted into laser beams, which are radiated onto the drum.


CIS
Copy lamp unit
HDD
CCD UN
MOTHER PWB
PCU PWB
MFP CONTROL PWB
DRUM
LSU

(4) Carriage (lamp unit) shift (scan) speed

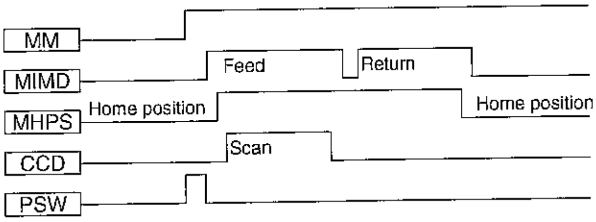
The carriage scan speed depends on the copy magnification ratio.

Speed up to 171% = 220mm/s

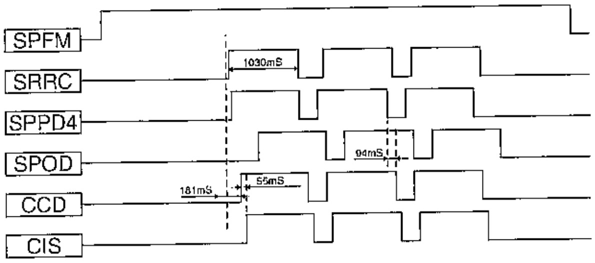
Speed of 172% - 400% = 110mm/s

(5) Timing chart

Platen timing chart



SPF duplex timing chart



⚠: Feb. 6 2004

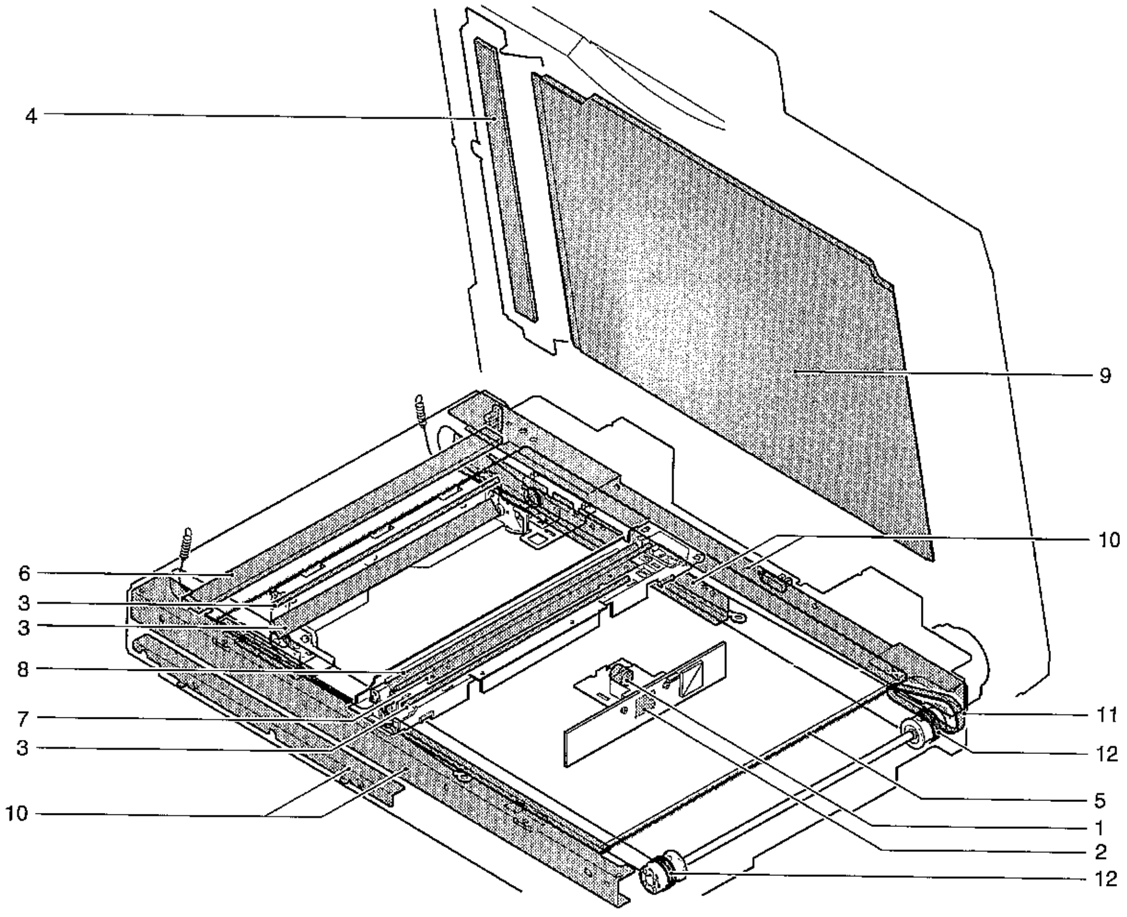
D. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❑: Shift position

⚠

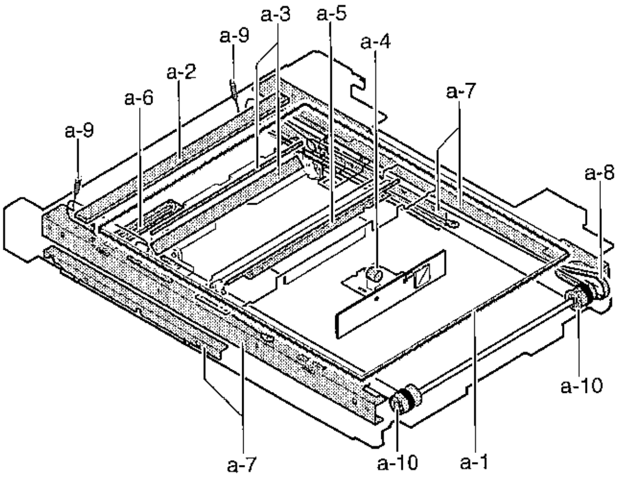
		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N, AR-M700U/N (PM: 300K)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Scanner section	1	Lens		○	○	○	○	○	○	○	○	
	2	CCD		○	○	○	○	○	○	○	○	
	3	Sensor		○	○	○	○	○	○	○	○	
	4	CIS filter glass		○	○	○	○	○	○	○	○	
	5	Table glass		○	○	○	○	○	○	○	○	
	6	Slit glass (SPF scan mode)		○	○	○	○	○	○	○	○	
	7	Reflector		○	○	○	○	○	○	○	○	
	8	Scanner lamp		○	○	○	○	○	○	○	○	
	9	Document mat		○	○	○	○	○	○	○	○	
	10	Rail (Grease)		☆	☆	☆	☆	☆	☆	☆	☆	
	11	Drive belt		×	×	×	×	×	×	×	×	
	12	Drive wire		×	×	×	×	×	×	×	×	

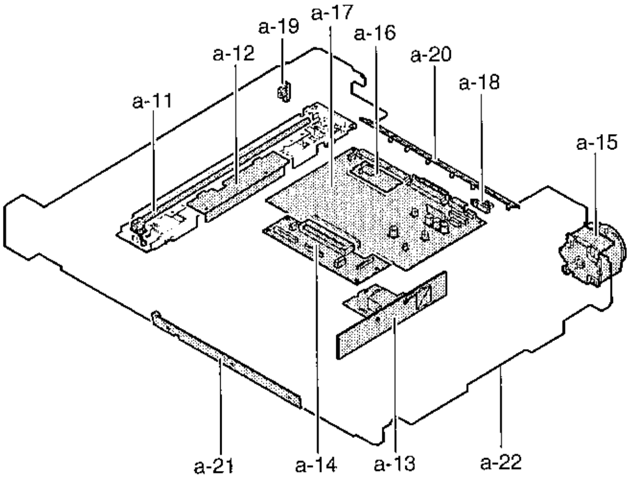


(2) Maintenance and parts replacement

(Replacement parts)

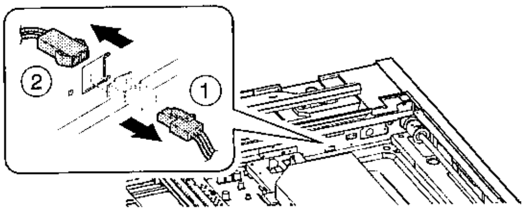
No.	Unit	Parts		
a	Scanner unit	1	Table glass	○
		2	Slit glass (SPF scan mode)	○
		3	Mirror	○
		4	Lens	○
		5	Reflector	○
		6	Scanner dry heater	
		7	Rails	☆
		8	Drive belt	×
		9	Drive wire	×
		10	Pulley	×
a	Scanner unit	11	Scanner lamp	○
		12	Inverter PWB	
		13	CCD lens unit	○
		14	Scanner relay PWB	
		15	Scanner motor	
		16	Scanner FLASH PWB	
		17	Scanner control PWB	
		18	SPF open/close detector	
		19	Scanner home position sensor detector	
		20	Document size detection light emitting PWB	
		21	Document size detection light receiving PWB	



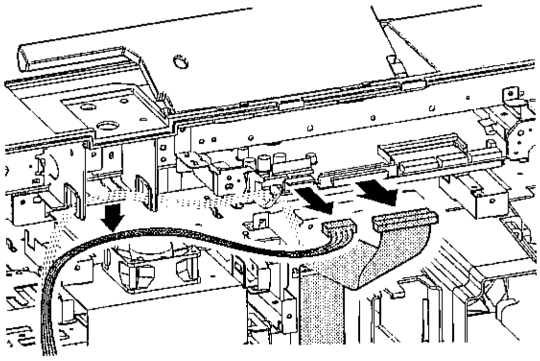


a. Scanner unit

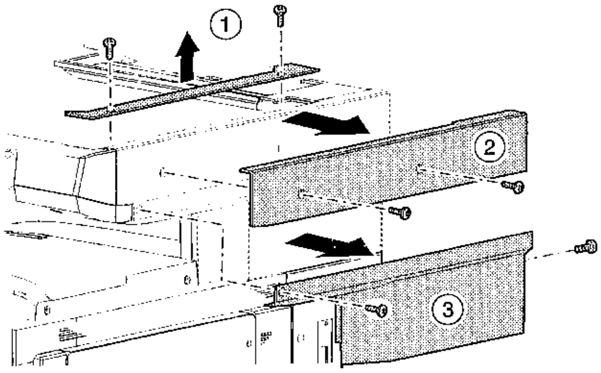
1) Remove the SPF unit. (See "a. SPF unit" in the "SPF section")
2) Remove the table glass. (See "a-1. Table glass" in this section)
3) Remove the panel lock connector. (For dehumidifier heater)



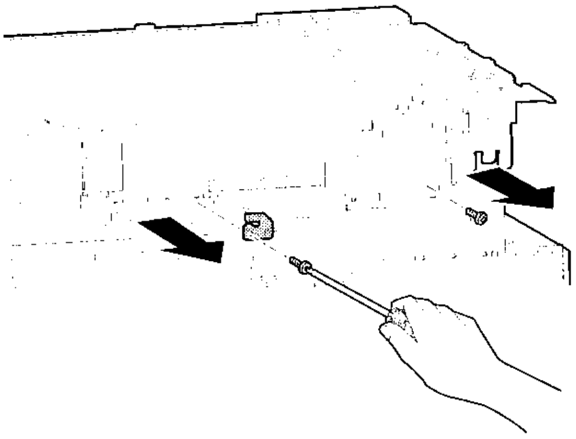
4) Remove the flat cable, the connector, and harness from the cable clamp.



5) Remove the right side cabinets upper and lower.



6) Remove the screw and the fixing plate.



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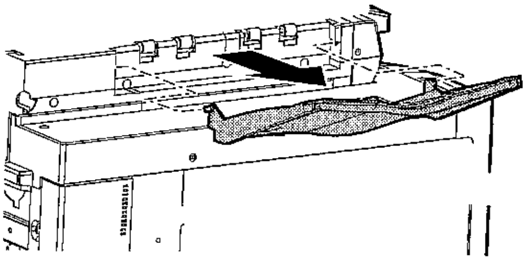
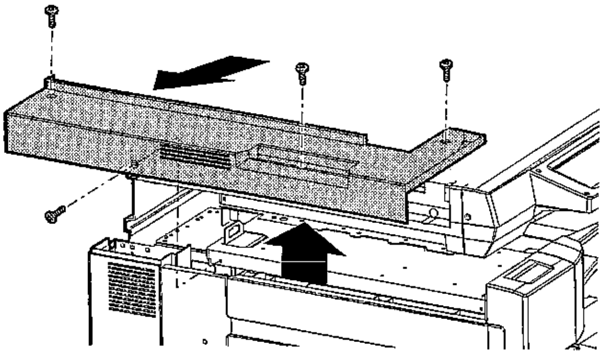
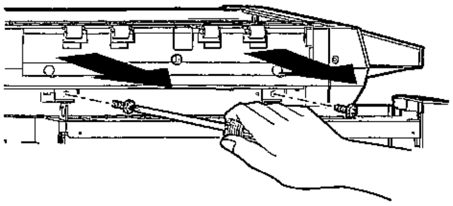
7) Remove the tray.



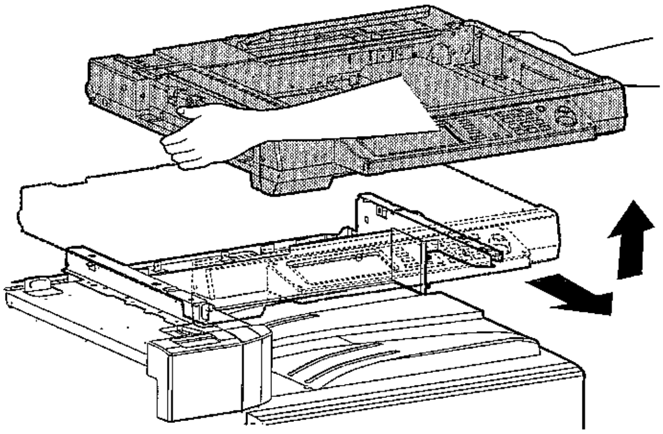
8) Remove the left side cabinets front and rear.



9) Remove the screw.



10) Hold the both sides of the scanner base, and slide it toward you to remove.

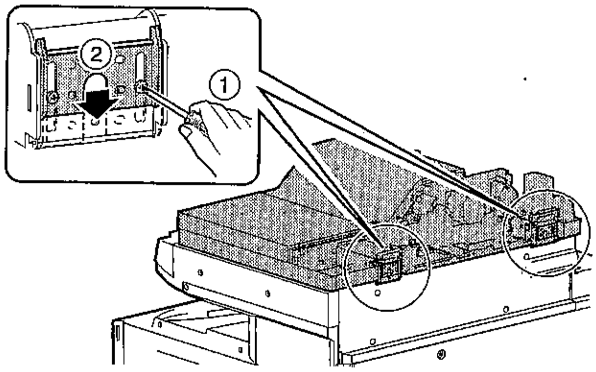


a-1. Table glass

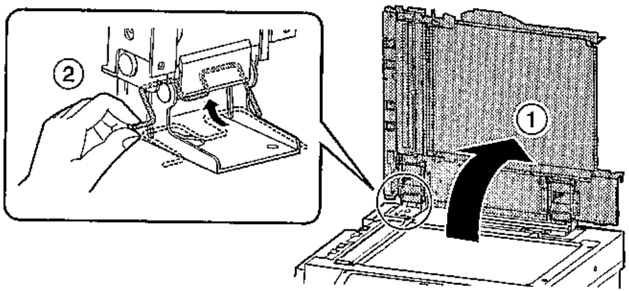
a-2. Slit glass (SPF scan mode)

⚠ **(When executing internal maintenance of the scanner)**

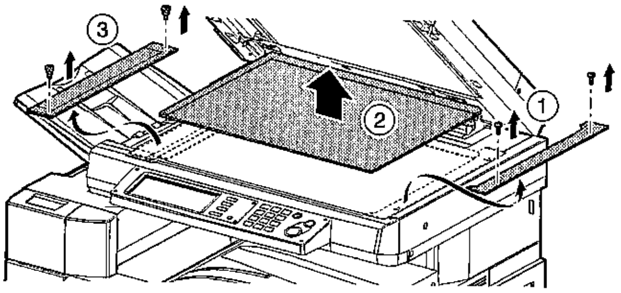
1) Loosen the screws in the hinge section, and lower the two metal fixtures.



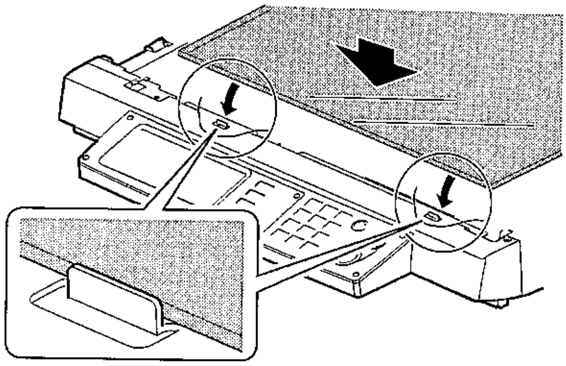
2) Open the SPF, and slide the SPF drop-preventing stopper pin of the Hinge L to the drop preventing position.



3) Remove the right glass holder.



⚠ NOTE: When assembling or disassembling the table glass, check that the glass does not cover the steel plate on the front side.



4) Using a cloth, etc. on the right glass surface to prevent fingerprints, remove the cover.

5) Remove the white reference glass unit.

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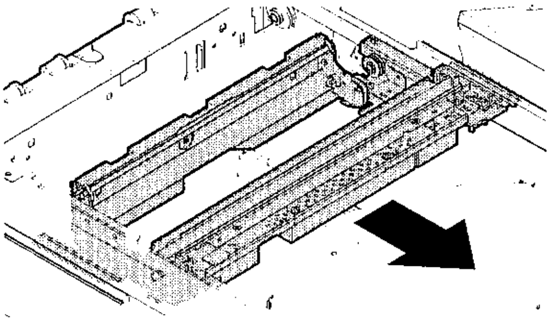
a-3. Mirror

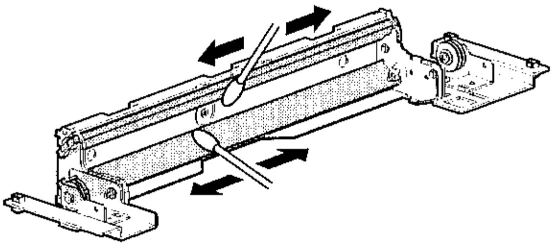
a-4. Lens

a-5. Reflector

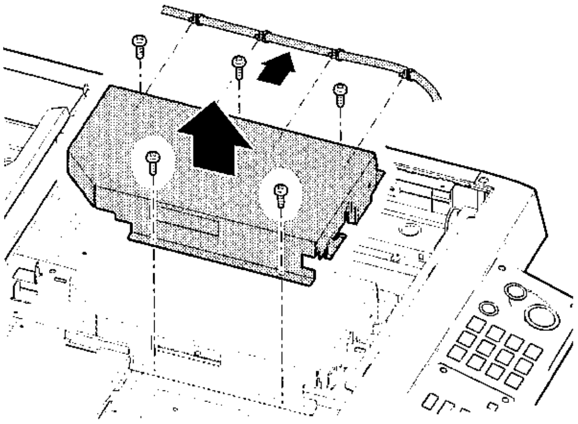
1) Remove the table glass. (See "a-1. Table glass" in this section)
2) Move the lamp unit.



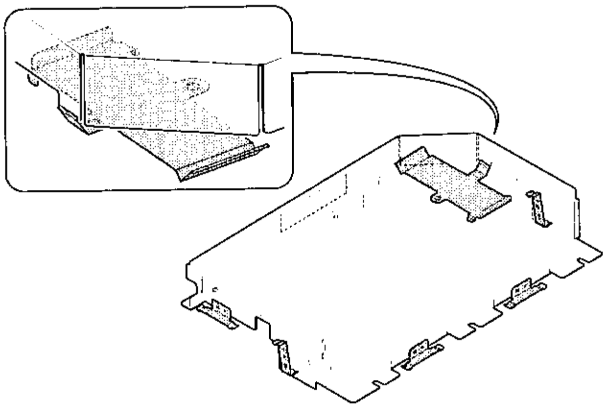
3) Clean mirrors 2 and 3.



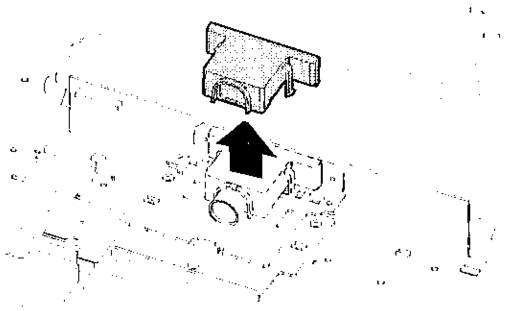
▲1 4) Remove the harness clamp and the dark box.



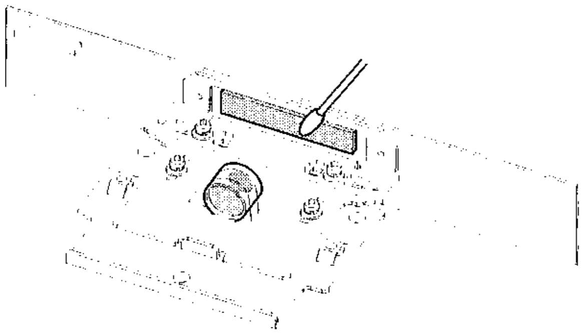
NOTE: When attaching the dark box cover, check to insure that the blade spring is in the original position.



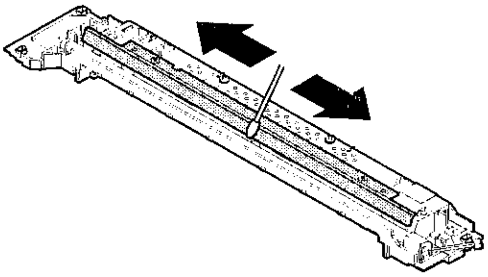
5) Remove the lens cover.



6) Cary out cleaning of the lens and CCD.

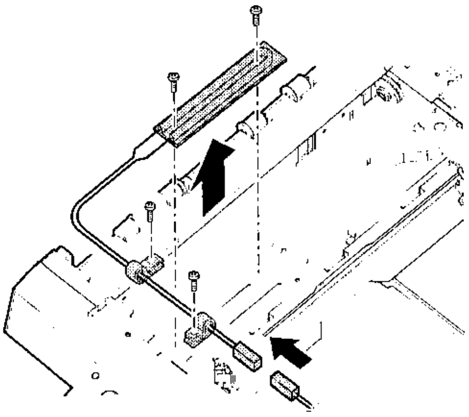


7) Cary out cleaning of the reflector.



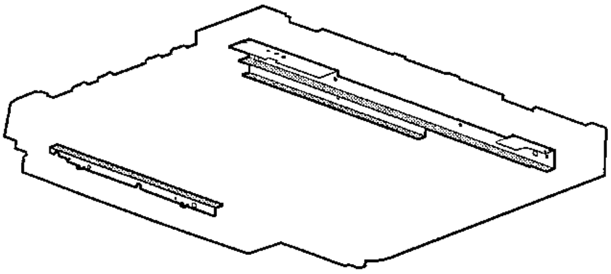
a-6. Scanner dry heater

1) Remove the table glass. (See "a-1. Table glass" in this section)
▲1 2) Shift the lamp unit, and remove the dark box. (See "a-3. Mirror" in this section)
3) Remove the dark box and remove the harness clamp, and remove the scanner dry heater.



a-7. Rails

1) Remove the table glass. (See "a-1. Table glass" in this section)
2) Grease up the rails.

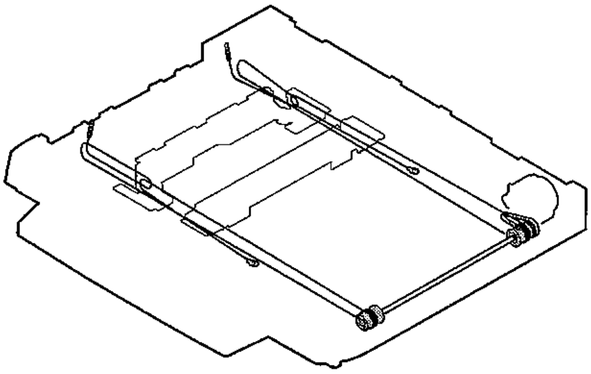


a-8. Drive belt

a-9. Drive wire

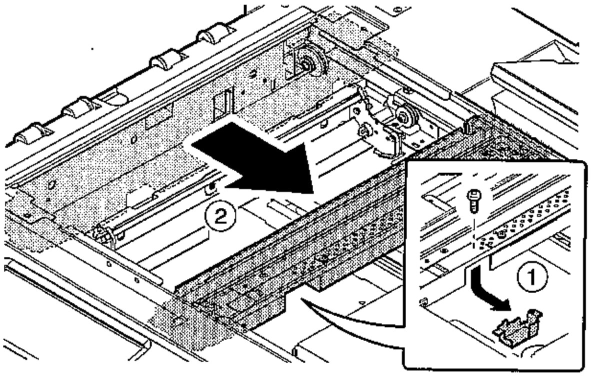
a-10. Pulley

1) Remove the table glass. (See "a-1. Table glass" in this section)
2) Check the drive belt, drive wire and pulley

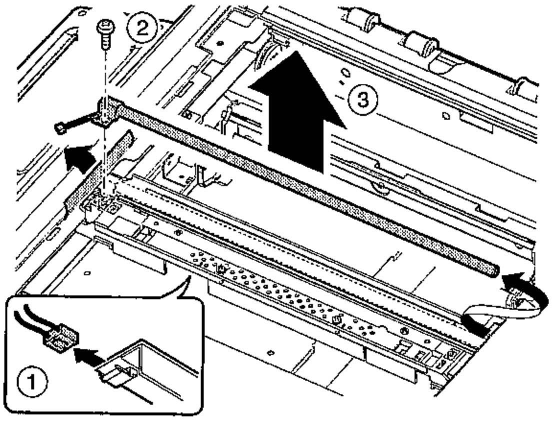


a-11. Scanner lamp

1) Remove the table glass. (See "a-1. Table glass" in this section)
2) Remove the core guide to shift the optical lamp unit to the base plate cutout section.



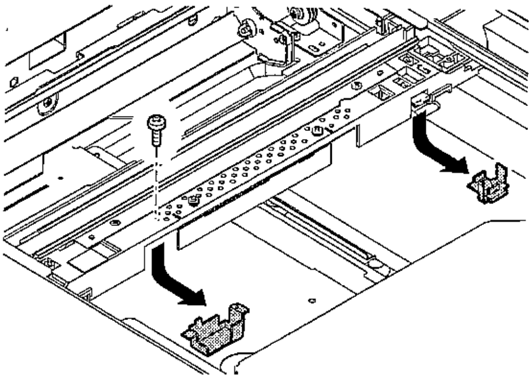
3) Remove the front side connector.



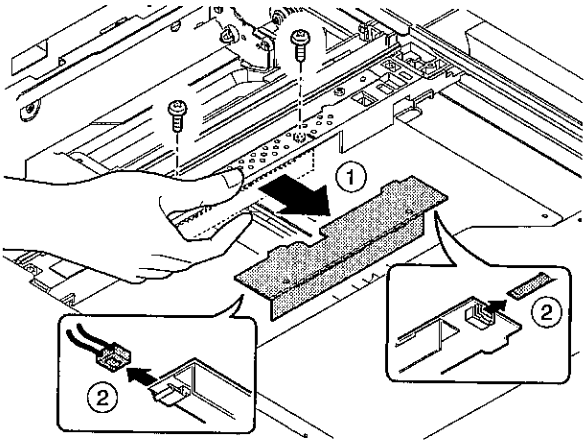
4) Turn up the cutout mylar and remove the screw; then shift the lamp holder to the front side and take out the lamp from above on the rear side.
5) Remove the harness connector from the hole on the front side.

a-12. Inverter PWB

1) Remove the table glass. (See "a-1. Table glass" in this section)
2) Remove the core guide.



3) Unhook the claw to remove the plastic members on the rear side.
4) While holding to prevent from falling, remove the screw fixing to remove the inverter PWB.



5) Disconnect the lamp connectors.
6) Release the connector lock on the inverter PWB to remove the FC cable.
7) When attaching, place each harness on the rib.

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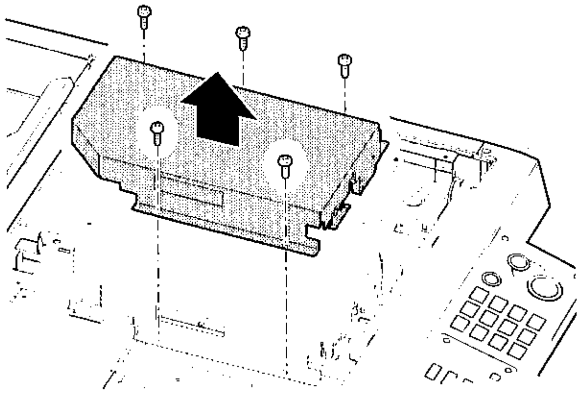
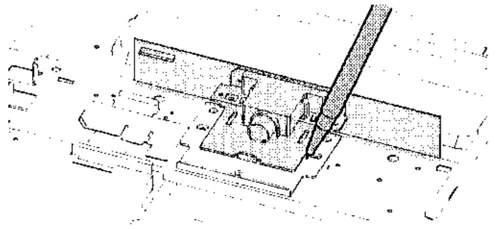
a-13. CCD lens unit

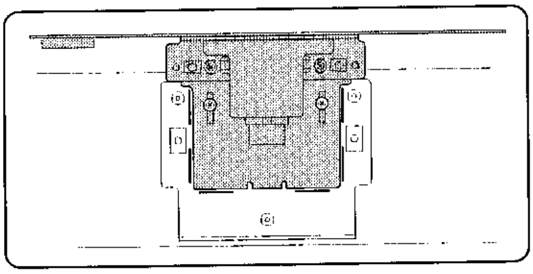
1) Remove the table glass. (See "a-1. Table glass" in this section)

▲1 2) Remove the harness clamp and the dark box.

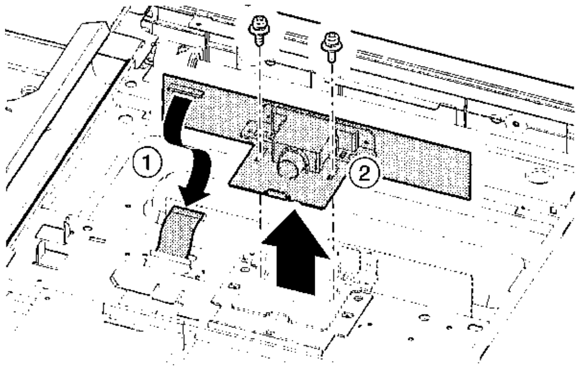


3) Mark the lens unit plate position by pen.





4) Release the connector lock on the CCD PWB to remove the FFC cable.



5) Remove the screw to remove the CCD PWB lens unit.

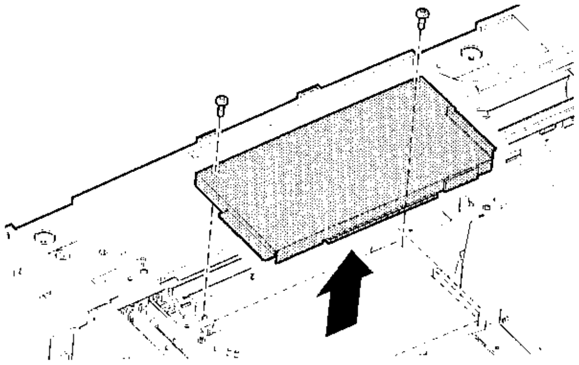
6) Attach the CCD PWB lens unit to the marked position.

a-14. Scanner relay PWB

1) Remove the table glass. (See "a-1. Table glass" in this section)

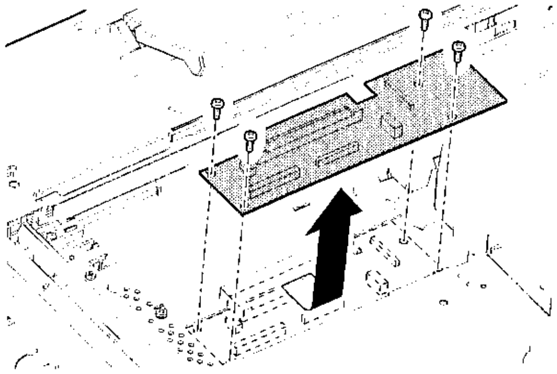
2) Remove the harness cover B.

▲1



3) Disconnect the connector, and remove the scanner interface PWB.

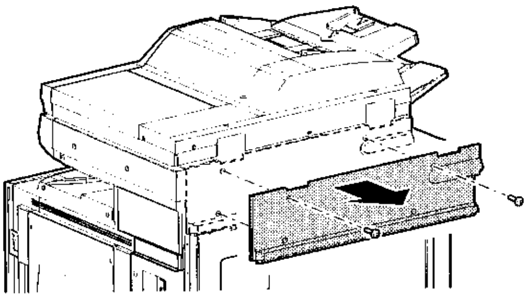
▲1



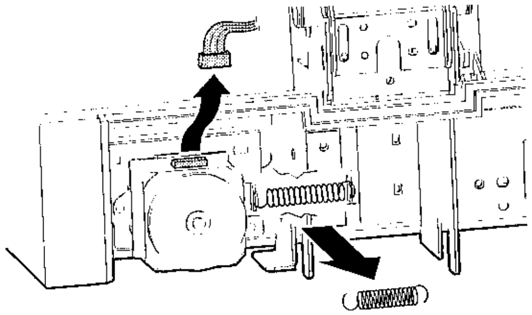
a-15. Scanner motor

1) Remove the rear cabinet.

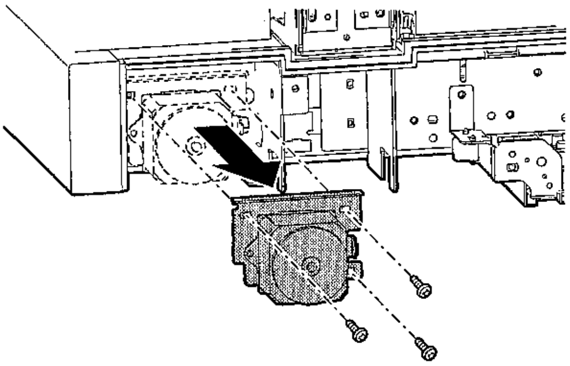
▲1



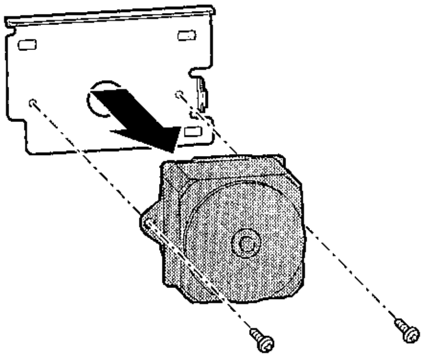
2) Remove the spring and disconnect the connector.



3) Remove the scanner motor unit.



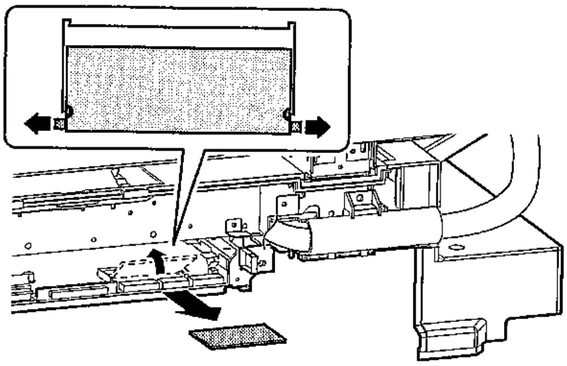
4) Remove the scanner motor.



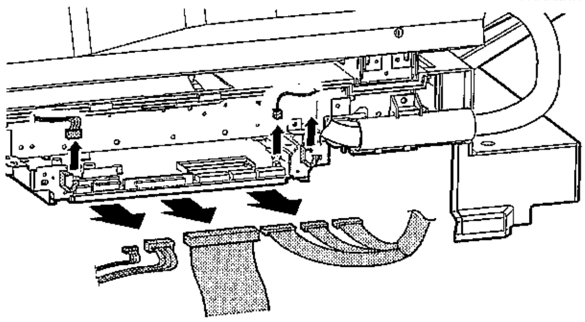
a-16. Scanner FLASH PWB

a-17. Scanner control PWB

1) Remove the rear cabinet. (See "a-15. Scanner motor" in this section)
2) Release the lock, and remove the scanner Flash PWB.

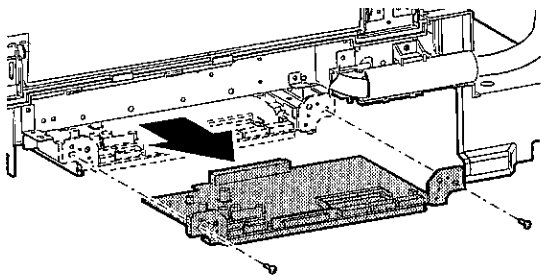


3) Remove the clamp, and disconnect the connector.

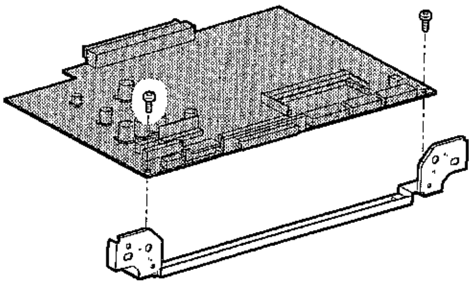


NOTE: Do not disconnect the PCN harness connector.

4) Remove the scanner control PWB unit.



5) Remove the scanner control PWB.

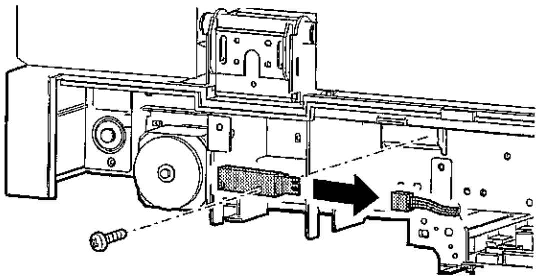


a-18. SPF open/close detector

1) Remove the rear cabinet. (See "a-15. Scanner motor" in this section)
2) Disconnect the connector, and remove the SPF open/close detector.

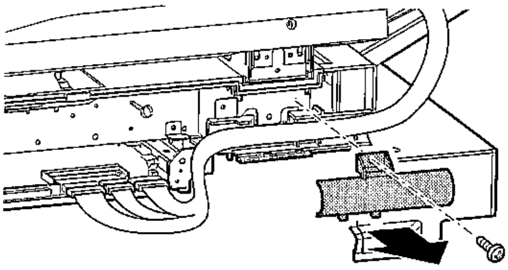
▲ **[Note for handling]**

- When disconnecting the connector, hold the housing section and slide straightly to remove.



a-19. Scanner home position sensor detector

1) Remove the rear cabinet. (See "a-15. Scanner motor" in this section)
2) Remove the SPF harness holder B.



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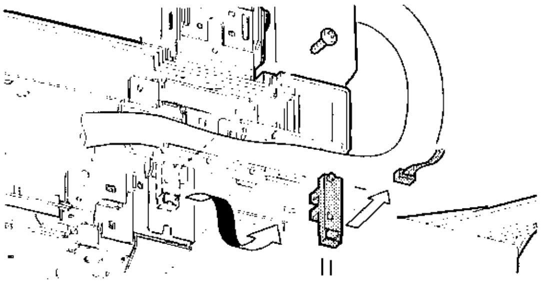
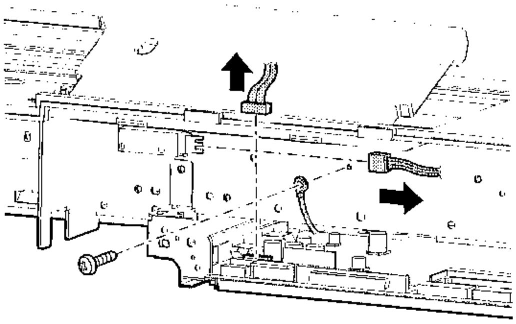
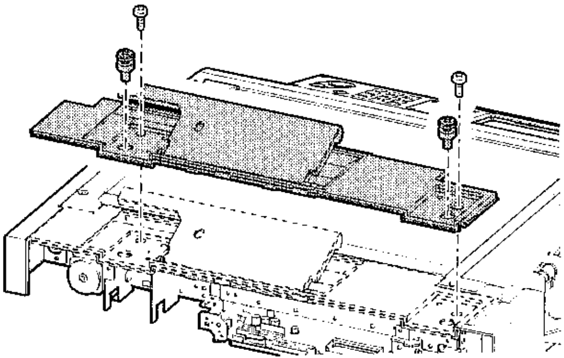
3) Disconnect the connector, and remove the scanner home position sensor.



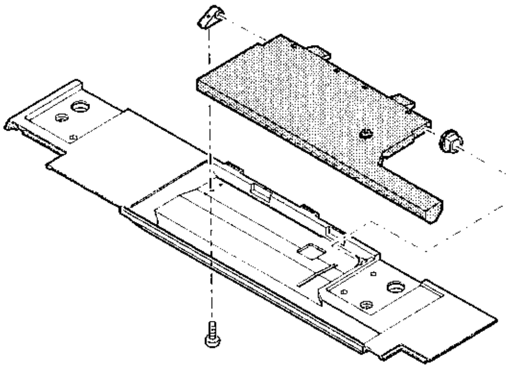
a-20. Document size detection light emitting PWB

1) Remove the SPF unit. (See "a. SPF unit" in the "7. SPF section")
2) Disconnect the connector and the earth terminal, and remove the upper cabinet rear.

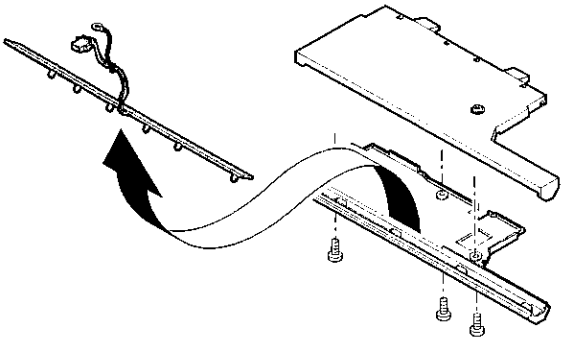




3) Remove the document detection fulcrum TIG, and remove the document detection arm unit.

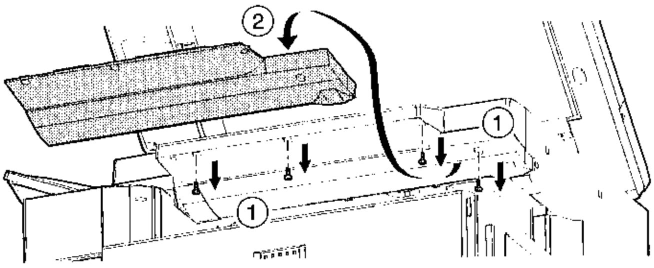


4) Remove the document detection arm lower, and remove the document detection light emitting unit.

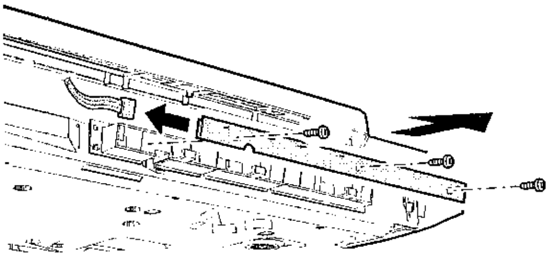


a-21. Document size detection light receiving PWB

1) Remove the operation base plate A.



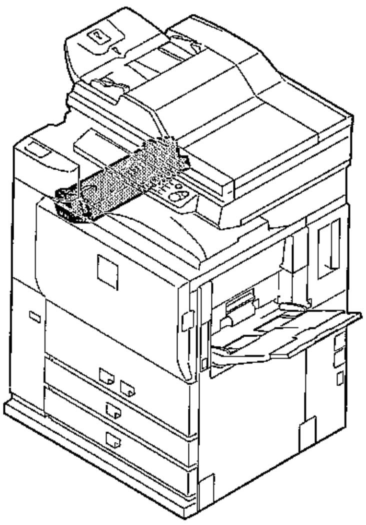
2) Remove the document size detection light receiving PWB., and disconnect the connector.



▲ **[Note for assembly]**

- First, connect the harness to the PWB, and check that PWB parts are properly connected. Then attach the PWB to the PWB holder.

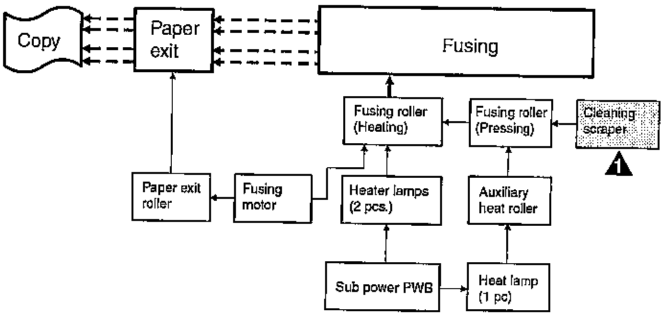
6. Fusing section



A. General

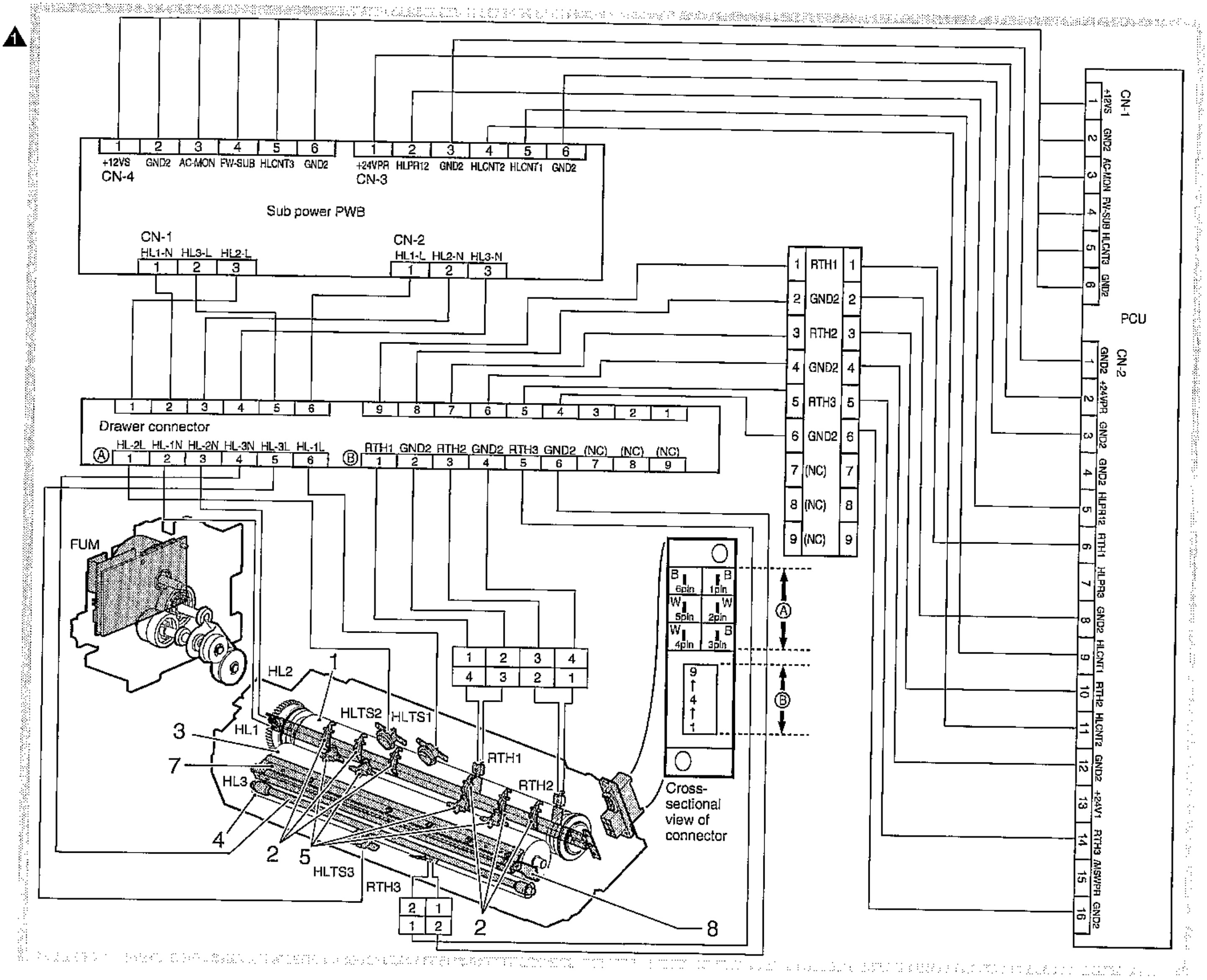
This section performs the following functions and operations.

1) Toner attached to paper in the transfer section are heated and pressed onto paper to fuse.
2) The auxiliary heat roller is used to improve fusing capacity and separation capacity after fusing.


Copy
Paper exit
Fusing
Fusing roller (Heating)
Fusing roller (Pressing)
Cleaning scraper
Paper exit roller
Fusing motor
Heater lamps (2 pcs.)
Auxiliary heat roller
Sub power PWB
Heat lamp (1 pc)

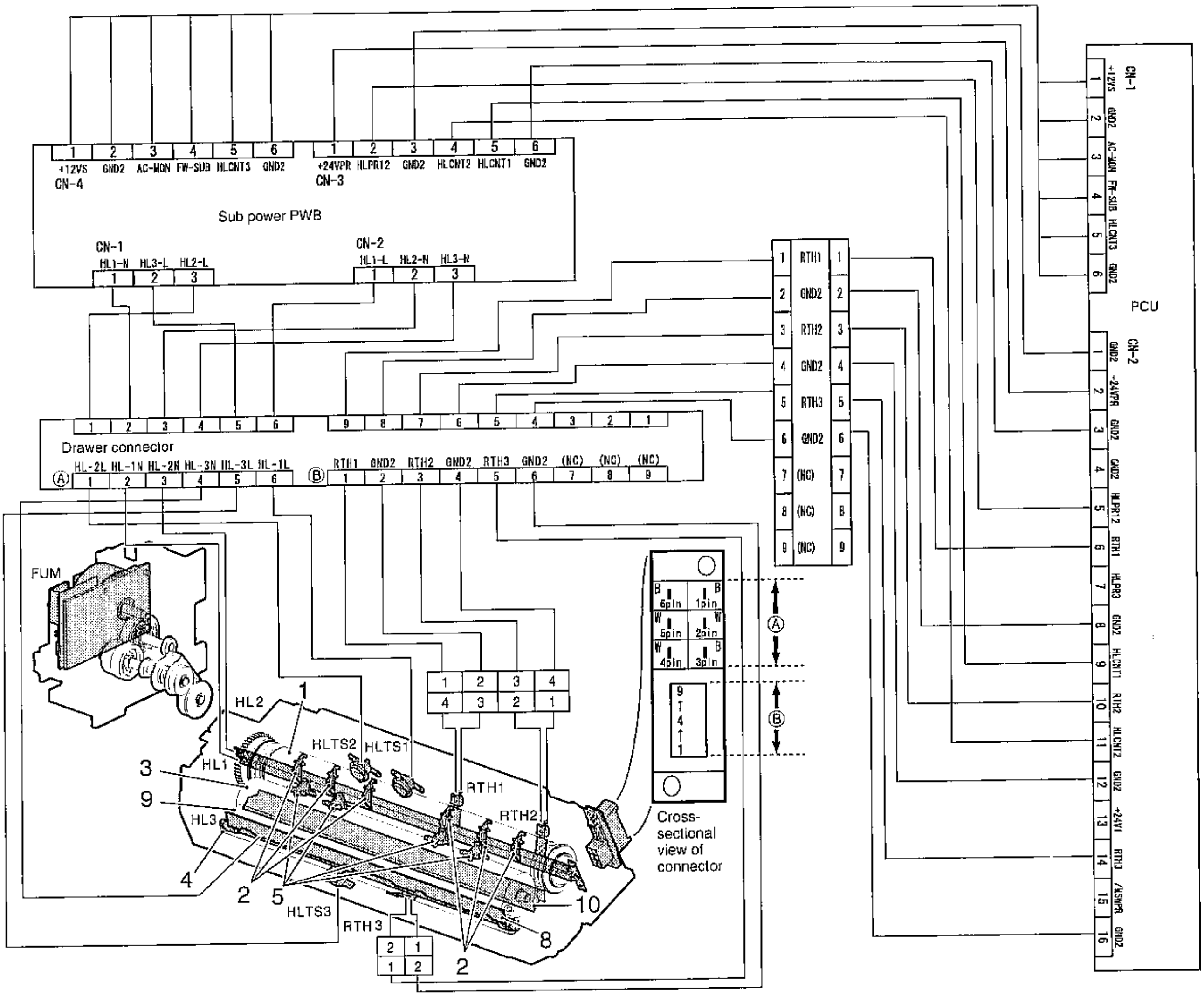
B. Major parts and signal functions

■ **AR-M550N/U, AR-M620N/U**


CN-4
1 +12VS
2 GND2
3 AC-MON
4 FW-SUB
5 HLCNT3
6 GND2
CN-3
1 +24VPR
2 HLPR12
3 GND2
4 HLCNT2
5 HLCNT1
6 GND2
Sub power PWB
CN-1
HL1-N 1
HL3-L 2
HL2-L 3
CN-2
HL1-L 1
HL2-N 2
HL3-N 3
Drawer connector
Ⓐ
HL-2L 1
HL-1N 2
HL-2N 3
HL-3N 4
HL-3L 5
HL-1L 6
Ⓑ
RTH1 1
GND2 2
RTH2 3
GND2 4
RTH3 5
GND2 6
(NC) 7
(NC) 8
(NC) 9
1 RTH1 1
2 GND2 2
3 RTH2 3
4 GND2 4
5 RTH3 5
6 GND2 6
7 (NC) 7
8 (NC) 8
9 (NC) 9
PCU
CN-1
1 +12VS
2 GND2
3 AC-MON
4 FW-SUB
5 HLCNT3
6 GND2
CN-2
1 GND2
2 +24VPR
3 GND2
4 GND2
5 HLPR12
6 RTH1
7 HLPR3
8 GND2
9 HLCNT1
10 RTH2
11 HLCNT2
12 GND2
13 +24V1
14 RTH3
15 /MSWPR
16 GND2
FUM
HL2
HL1
HL3
HLTS2
HLTS1
HLTS3
RTH1
RTH2
RTH3
1 2 3 4
4 3 2 1
2 1
1 2
1
2
3
4
5
7
8
B 6pin
B 1pin
W 5pin
W 2pin
W 4pin
B 3pin
9 ↑ 4 ↑ 1
Ⓐ
Ⓑ
Cross-sectional view of connector

⚠ : Feb. 6 2004

■ AR-M700N/U


1 2 3 4 5 6
+12VS GND2 AC-MON FW-SUB HLCNT3 GND2
CN-4
1 2 3 4 5 6
+24VPR HLPR12 GND2 HLCNT2 HLCNT1 GND2
CN-3
Sub power PWB
CN-1
HL1-N HL3-L HL2-L
1 2 3
CN-2
HL1-L HL2-N HL3-N
1 2 3
1 2 3 4 5 6
9 8 7 6 5 4 3 2 1
Drawer connector
Ⓐ HL-2L HL-1N HL-2N HL-3N HL-3L HL-1L
1 2 3 4 5 6
Ⓑ RTH1 GND2 RTH2 GND2 RTH3 GND2 (NC) (NC) (NC)
1 2 3 4 5 6 7 8 9
1 RTH1 1
2 GND2 2
3 RTH2 3
4 GND2 4
5 RTH3 5
6 GND2 6
7 (NC) 7
8 (NC) 8
9 (NC) 9
PCU
CN-1
1 +12VS
2 GND2
3 AC-MON
4 FW-SUB
5 HLCNT3
6 GND2
CN-2
1 GND2
2 +24VPR
3 GND2
4 GND2
5 HLPR12
6 RTH1
7 HLPR3
8 GND2
9 HLCNT1
10 RTH2
11 HLCNT2
12 GND2
13 +24V1
14 RTH3
15 /WSMPR
16 GND2
FUM
HL2
HL1
HL3
HLTS2
HLTS1
HLTS3
RTH1
RTH2
RTH3
1 2 3 4
4 3 2 1
2 1
1 2
1
2
3
4
5
8
9
10
B 6pin
B 1pin
W 5pin
W 2pin
W 4pin
B 3pin
9 ↑ 4 ↑ 1
Ⓐ
Ⓑ
Cross-sectional view of connector

Code	Signal name	Name	Type	Function/Operation	Active condition	Note
⚠ RTH1	RTH1	Fusing temperature sensor (1)	Thermistor	Detects the surface temperature of the fusing roller (heating). (Center section)	Analog input	
⚠ RTH2	RTH2	Fusing temperature sensor (2)	Thermistor	Detects the surface temperature of the fusing roller (heating). (Edge section)	Analog input	
HLTS1	HLTS1	Thermostat (1)		Shuts conduction to the heater lamp when the temperature rises abnormally. [For the fusing roller (heating)]		
HLTS2	HLTS2	Thermostat (2)		Shuts conduction to the heater lamp when the temperature rises abnormally. [For the fusing roller (heating)]		
HL1	HL1	Heater lamp (1)		Heats the fusing roller (heating).		
HL2	HL2	Heater lamp (2)		Heats the fusing roller (heating).		
RTH3	RTH3	Fusing temperature sensor (3)	Thermistor	Detects the surface temperature of the auxiliary heat roller.		
HLTS3	HLTS3	Thermostat (3)		Shuts conduction to the heater lamp when the temperature rises abnormally. [For the auxiliary heat roller]	Analog input	
HL3	HL3	Heater lamp (3)		Heats the auxiliary heat roller.		
FUM	FUM	Fusing motor		Drives the fusing unit.		

No.	Name	Function/Operation	Active condition	Note
1	Fusing roller (heating)	Heats toner on paper and fuses it on paper.		
2	Separation pawl	Mechanically separates paper which was not separated naturally from the fusing roller (heating).		
3	Fusing roller (pressing)	Heats and presses toner on paper.		
4	Auxiliary heat roller	Heats the fusing roller (pressing).		
5	Separation pawl	Mechanically separates paper which was not separated naturally from the fusing roller (heating).		

No.	Name	Function/Operation	Active condition	Note
7	Fusing cleaning scraper	Cleans the surface of the fusing roller (pressing).		(AR-M550N/U, AR-M620N/U)
8	Cleaning sheet	Clean the sub heat roller surface.		
9	Oil roller	Apply oil to the fusing roller.		(AR-M700N/U)
10	Cleaning plate	Clean the fusing (pressure) roller surface.		(AR-M700N/U)

C. Details of operations

(1) Fusing unit drive

To drive the fusing unit, the drive power is transmitted from the drive motor (FUM) through the connection gear to the upper heat roller gear.

The drive motor DC brushless motor is driven according to the control signal sent from the PCU.

PCU → FUM

(2) Heater lamp drive

The surface temperature of the heat roller detected by the thermistor is sent to the PCU.

When the temperature is lower than the specified level, the heater lamp lighting signal is sent from the PCU to the heater lamp drive circuit in the sub power PWB.

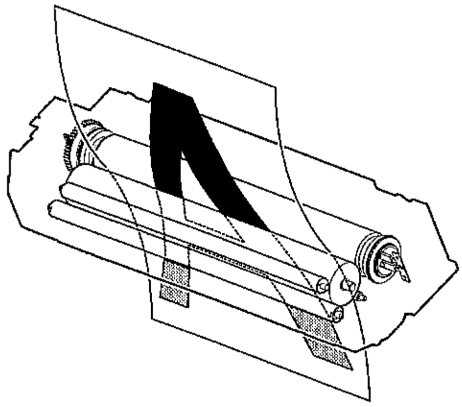
The power triac in the heater lamp drive circuit is turned on, and the AC power is supplied to the heater lamp, lighting the lamp and heating the heat roller.

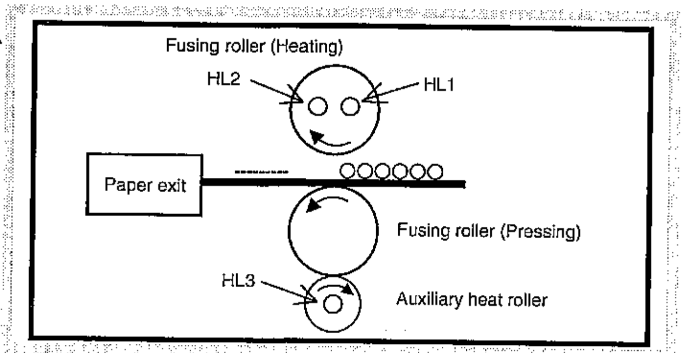
To prepare for an abnormally high temperature of the heat roller, the thermostat is provided for safety.

When the thermostat is opened, power supply (AC line) to the heater lamp is cut off.

(3) Fusing operation

Toner on paper is heated and pressed to be fused by the heat roller.





Two heater lamps are provided for the fusing heat roller (heating) and one heater lamp is provided for the auxiliary heat roller for the fusing roller (pressing) to heat paper from above and below.

This is because toner on paper must be heated from above and below to be fused on paper.

The fusing rollers (pressing) are of silicon rubber because of the following reasons and purpose.

1) Paper is separated upward. (Since the fusing roller (heating) is of higher hardness, the fusing roller (pressing) is deformed to separate paper upward.)
2) The nip quantity is increased to increase heat capacity for paper.
3) By pressing paper with the flexible roller, toner is fused without deformation. (The flatness, however, is not so high.)

(4) Fusing temperature control

The temperature sensor is provided at the center of the fusing roller (heating) and the auxiliary heat roller.

The roller temperature is detected by the installed temperature sensor, and the heater lamp is controlled so that the temperature is maintained at the specified level.

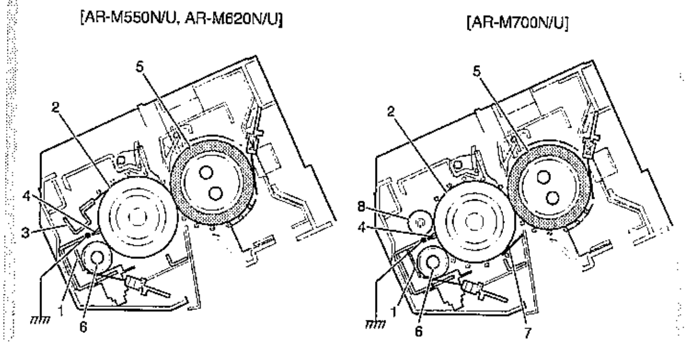
In addition, the fusing temperature is switched according to the kind of paper.

Mode	Paper	Fusing roller		Auxiliary heat roller	
		Inch (U.S.A., Canada)	AB_B (Europe, U.K.) AB_A (Australia)	Inch (U.S.A., Canada)	AB_B (Europe, U.K.) AB_A (Australia)
Ready condition print mode	Normal paper	200°C	205°C	200°C	205°C
	Heavy paper	200°C	205°C	200°C	205°C
	Tab paper	200°C	205°C	200°C	205°C
	Postcard	200°C	205°C	200°C	205°C
Pre-heat	–	170°C	170°C	170°C	170°C

(5) Cleaning operation

The fusing roller removes toner and dusts from the heat roller and the pressure roller surfaces by the following two methods.

1. Sub-heat roller (Heating): Clean the sub heat roller with the cleaning sheet.
2. Fusing roller (Pressing): Mechanical cleaning by the cleaning scraper (the cleaning plate for the AR-M700N/U)


[AR-M550N/U, AR-M620N/U] [AR-M700N/U]

No.	Name
1	Cleaning sheet
2	Fusing roller (Pressing)
3	Cleaning scraper (AR-M550N/U, AR-M620N/U)
4	Discharge brush
5	Fusing roller (Heating)
6	Sub-heat roller
7	Cleaning plate (AR-M700N/U)
8	Oil roller (AR-M700N/U)

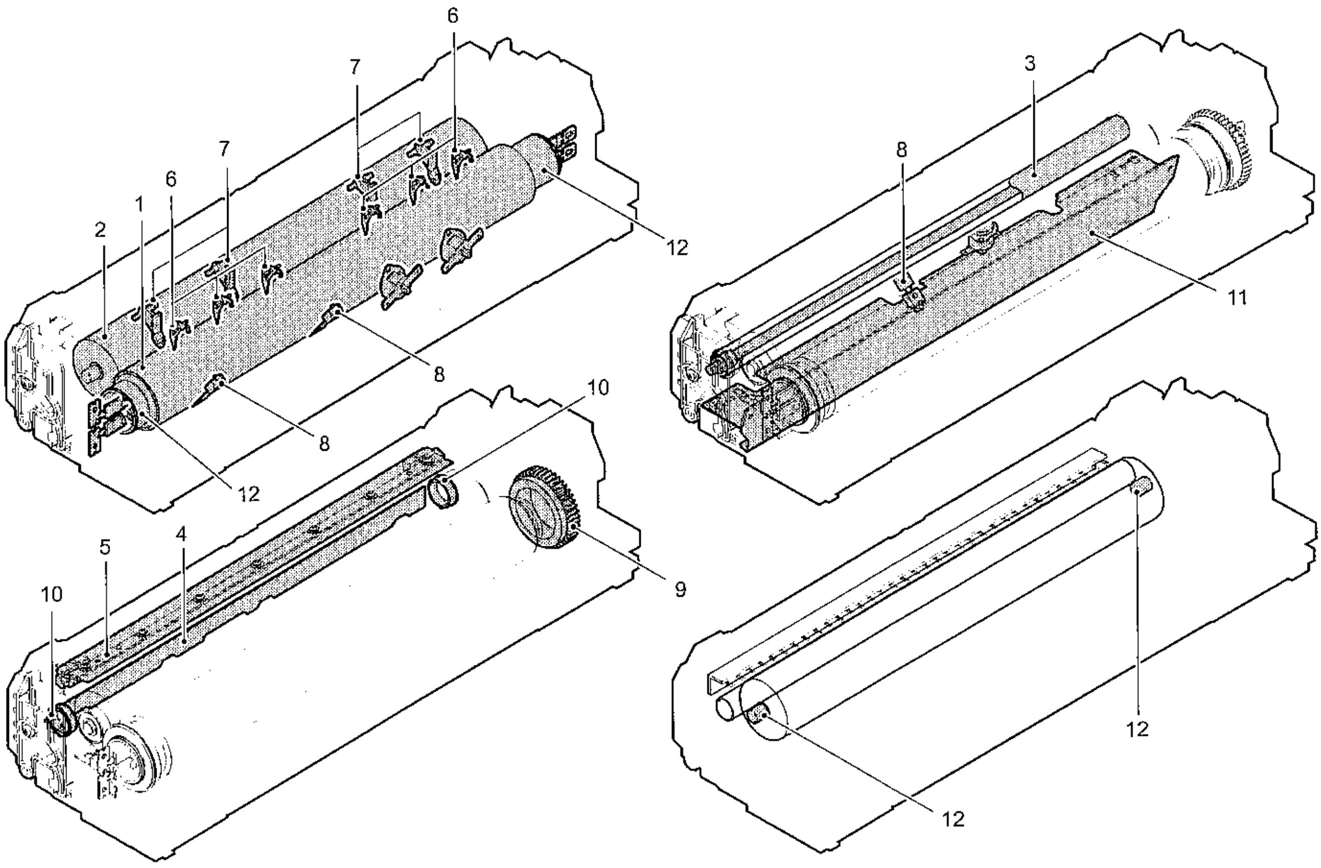
▲ : Feb. 6 2004

D. Maintenance and parts replacement

(1) Maintenance list (AR-M550N/U, AR-M620N/U)

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

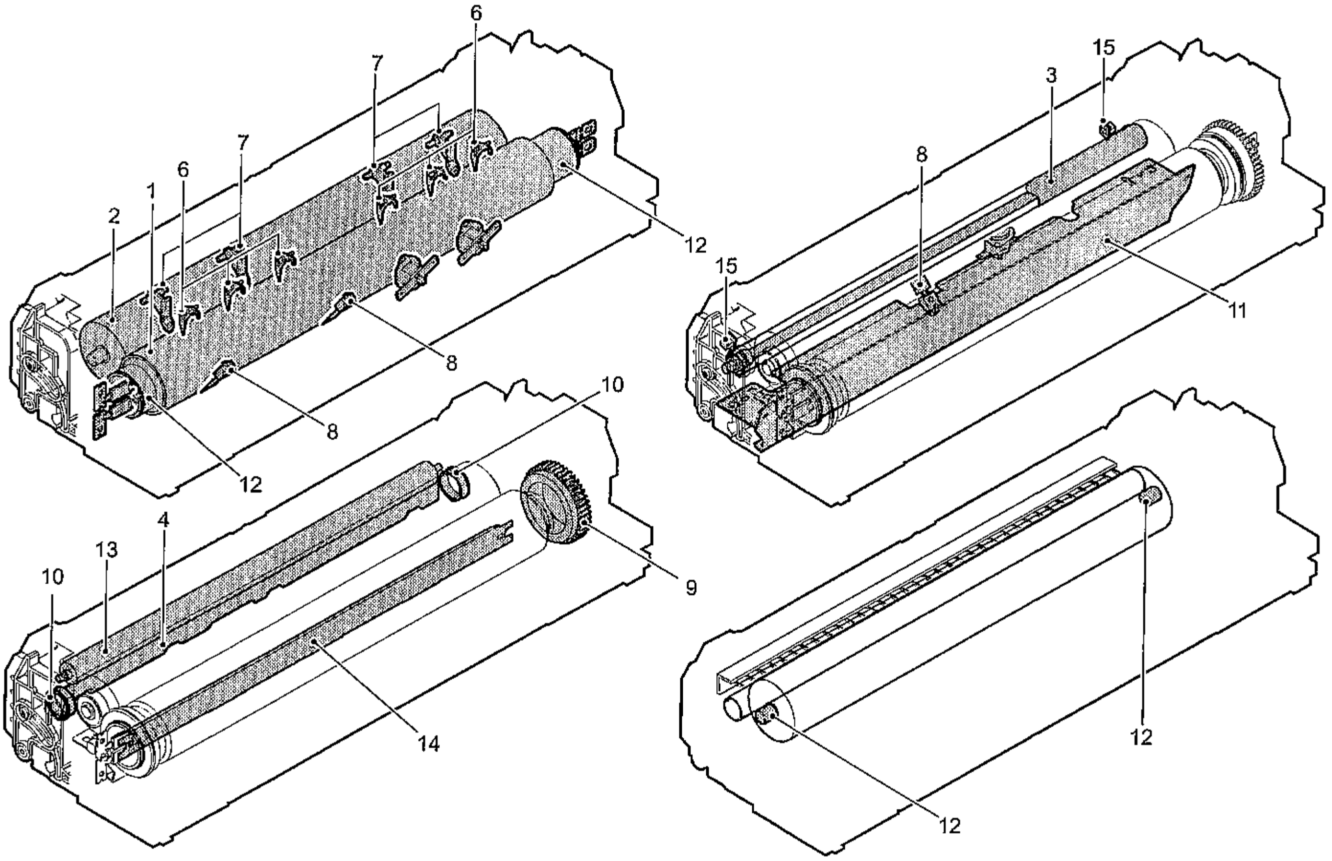
		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Fusing section	1	Heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
	2	Pressure roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
	3	Sub heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
	4	Cleaning sheet	×	△	△	▲	△	△	△	△	△	
	5	Fusing cleaning scraper	×	▲	▲	▲	▲	▲	▲	▲	▲	
	6	Heat roller separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	
	7	Pressure roller separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	
	8	Thermistor	×	×	×	×	×	×	×	×	×	Paper dust removal is required.
▲	9	Heat roller gear (Grease)		×	×	×	×	×	×	×	×	UKOG-0235FCZZ
	10	Sub heat roller bearing		▲	▲	▲	▲	▲	▲	▲	▲	
	11	Paper guides	○	○	○	○	○	○	○	○	○	
	12	Shaft (Grease)		☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0235FCZZ



⚠ (2) Maintenance list (AR-M700N/U)

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❑: Shift position

		AR-M700U/N (PM: 300K)	When calling	300K	600K	900K	1200K	1500K	1800K	2100K	2400K	Remark
Unit name	No.	Part name										
Fusing section	1	Heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
	2	Pressure roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
	3	Sub heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
	4	Cleaning sheet	×	▲	▲	▲	▲	▲	▲	▲	▲	
	6	Heat roller separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	
	7	Pressure roller separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	
	8	Thermistor	×	×	×	×	×	×	×	×	×	Paper dust removal is required.
	9	Heat roller gear (Grease)		×	×	×	×	×	×	×	×	UKOG-0235FCZZ
	10	Sub heat roller bearing		▲	▲	▲	▲	▲	▲	▲	▲	
	11	Paper guides	○	○	○	○	○	○	○	○	○	
	12	Shaft (Grease)		☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0235FCZZ
	13	Oil roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
	14	Cleaning plate	×	▲	▲	▲	▲	▲	▲	▲	▲	
	15	CL roller bearing	×	▲	▲	▲	▲	▲	▲	▲	▲	



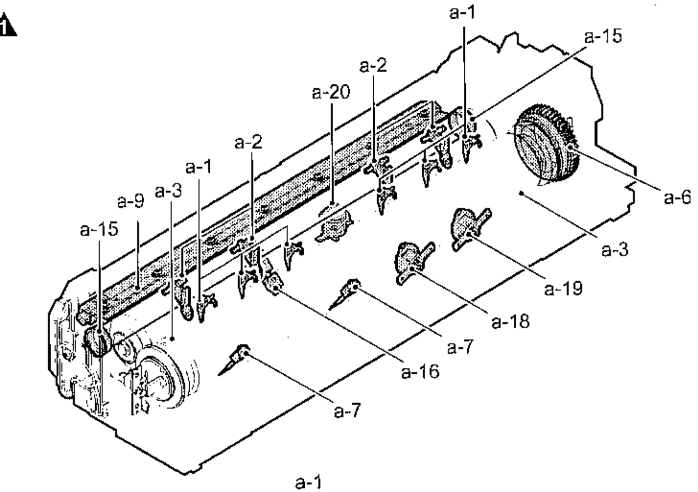
△1 : Feb. 6 2004

(3) Maintenance and parts replacement

(Replacement parts)

No.	Unit	Parts		
a	Fusing unit	1	Heat roller separation pawl	×▲
		2	Pressure roller separation pawl	×▲
		3	Heat roller	×▲
		4	Heater lamp 1	
		5	Heater lamp 2	
		6	Heat roller gear	×▲
		7	Thermistor (upper)	×▲
		8	Pressure roller	×▲
		9	Cleaning scraper (AR-M550N/U, AR-M620N/U)	×▲
		10	Oil roller (AR-M700N/U)	×▲
		11	CL roller bearing (AR-M700N/U)	×▲
		12	Paper guide	○
		13	Cleaning plate (AR-M700N/U)	×▲
		14	Sub heat roller	×▲
		15	Sub heat roller bearing	▲
		16	Thermistor (lower)	×▲
		17	Sub heater lamp	
		18	Thermostat 1	
		19	Thermostat 2	
		20	Thermostat 3	
		21	Discharge brush	○
		22	Cleaning sheet	×▲

■ AR-M550N/U, AR-M620N/U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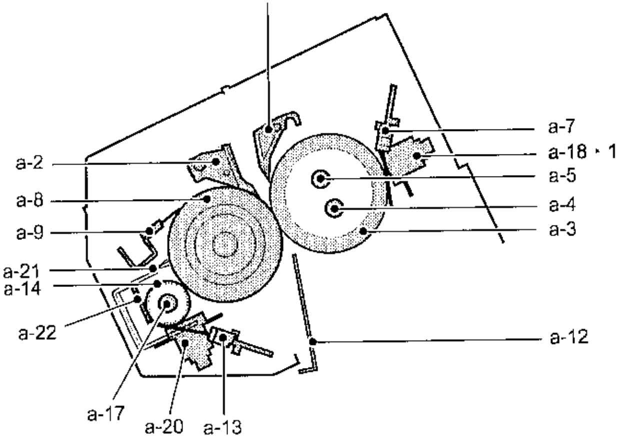
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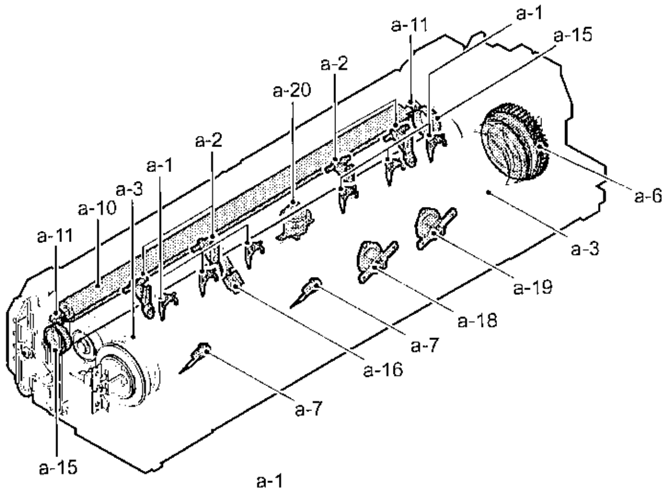
■ AR-M700N/U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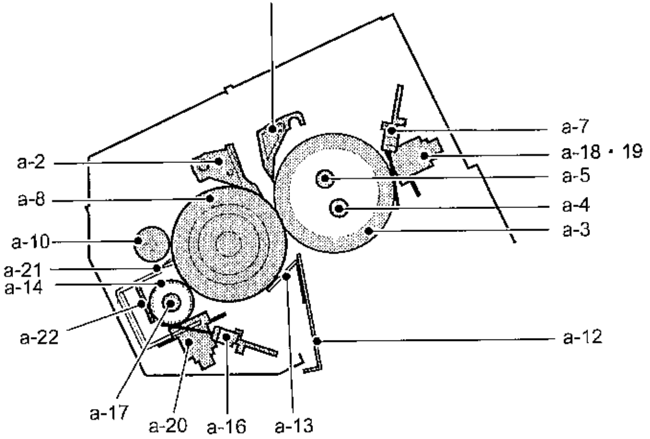
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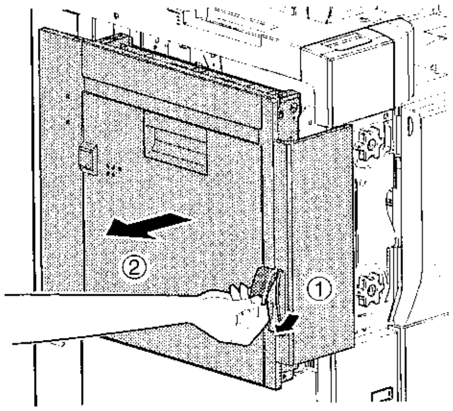
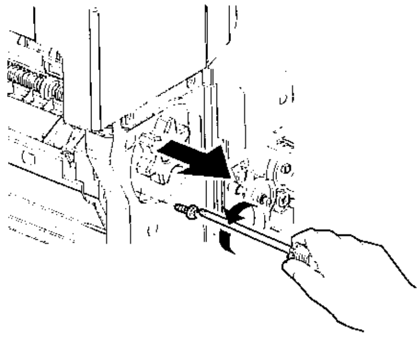
a. Fusing unit

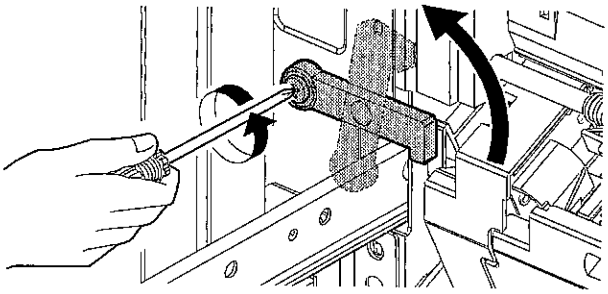
1) Open the left door unit.



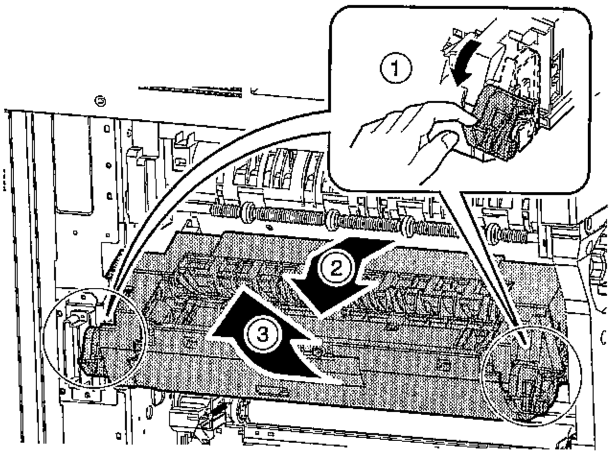
2) Remove the blue fixing screw on the front side.



3) Release the fixing members on the rear frame side.



4) Release the right and left lock levers of the fusing unit to remove the fusing unit.

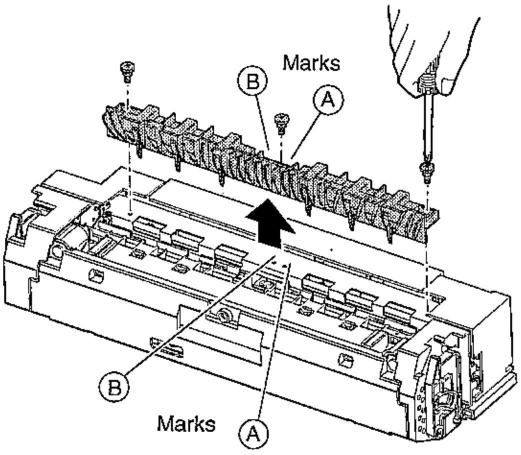


▲
- Caution for handling at a high temperature (Hold the both sides of the unit.)
- When removing the unit, be careful not to tilt it, and remove slowly. (This is because the unit includes paper dust scraped by the scraper.)

a-1. Heat roller separation pawl

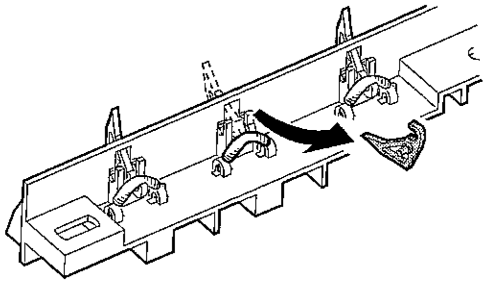
1) Remove the fusing unit. (See "a. Fusing unit" in this section)
2) Remove the heat roller separation pawl unit.

▲



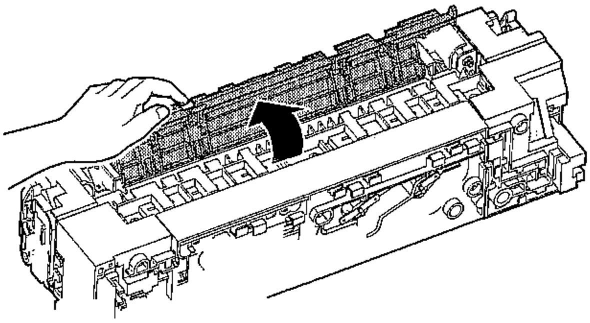
NOTE: When installing the unit, install to the standard position Ⓐ. (If the picture quality may be degraded damaged by the roller damage, change the installing position to Ⓑ.)

3) Remove the heat roller separation pawl.

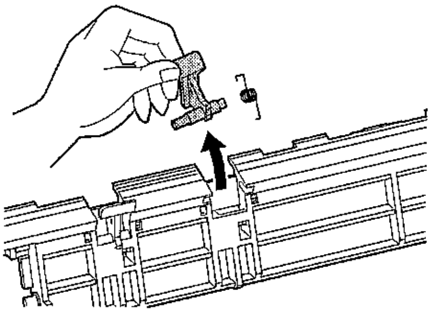


a-2. Pressure roller separation pawl

1) Remove the fusing unit. (See "a. Fusing unit" in this section)
2) Open the pressure roller separation pawl unit.



3) Remove the pressure roller separation pawl.



a-3. Heat roller

a-4. Heater lamp 1

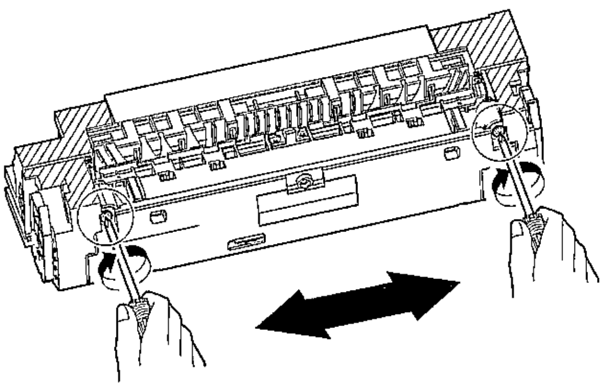
a-5. Heater lamp 2

a-6. Heat roller gear

a-7. Thermistor (upper)

1) Remove the fusing unit. (See "a. Fusing unit" in this section)
2) Alternately tighten the screws to release pressure.

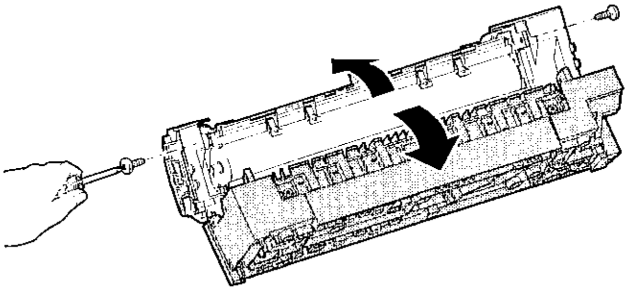
▲



NOTE: When tightening the screws and releasing the pressure, do not apply any force to the shaded area. (Otherwise, the PG on the paper entry side may be deformed.)

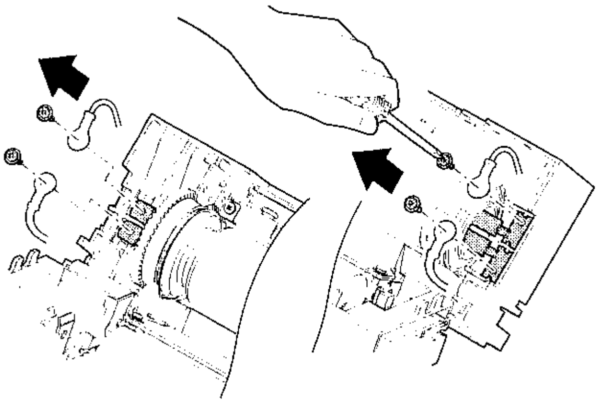
⚠ : Feb. 6 2004

⚠ 3) Remove the screws to open the fusing unit.



4) Remove the lamp fixing screw.

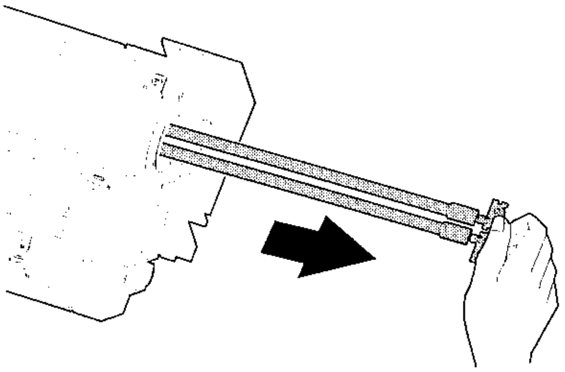
⚠



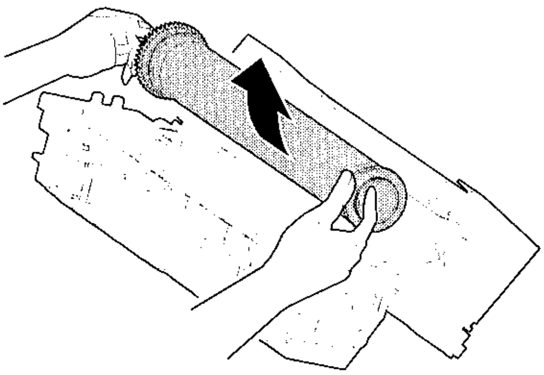
Rear side Front side

- When assembling, tighten the screws in the front side (drawer CN side) and then in the rear side (gear side) in this sequence.
- Check that the screw is securely tightened again. (If the screw is loose, the contact becomes defective to cause an overcurrent and overheating.)

5) Remove the heater lamp 1 and 2.

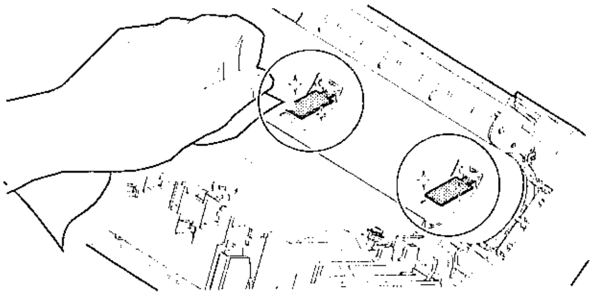


6) Remove the heat roller unit.

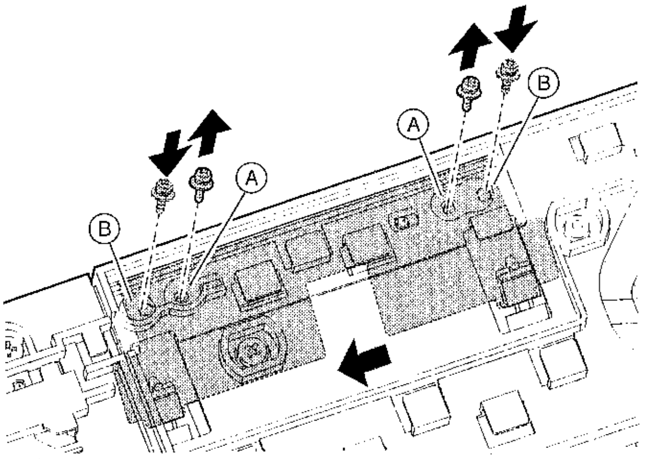


7) Clean the upper thermistor.

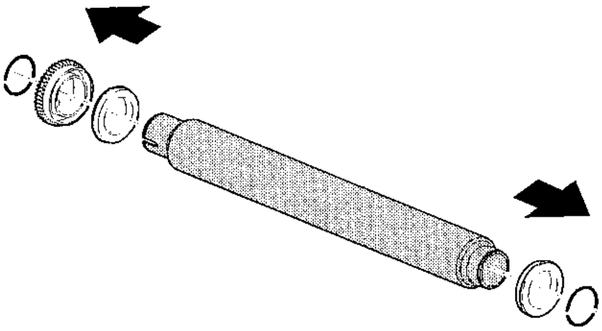
⚠ NOTE: Be careful of deformation of the plate spring of the thermistor.



⚠ NOTE: The thermistor position can be changed by shifting the thermistor mounting plate. (If the picture quality may be degraded damaged by the roller damage, change the installing position to Ⓑ.)

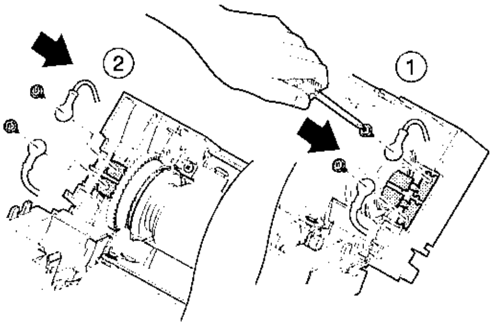


8) Remove the ring to remove the gear bearing.



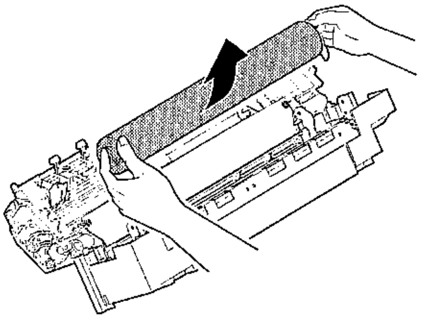
[Caution when Attaching]

- Affix the lamp fixing screw from the opposite side of the drive.

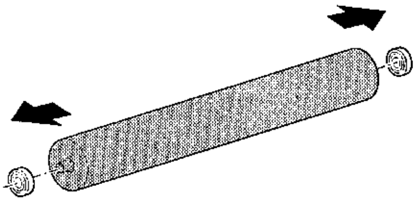


a-8. Pressure roller

1) Remove the fusing unit. (See "a. Fusing unit" in this section)
2) Release the pressure. (See "a-4. Heater lamp 1" in this section)
⚠ 3) Remove the screw to open the fusing unit.
4) Remove the fusing roller (pressing) unit.

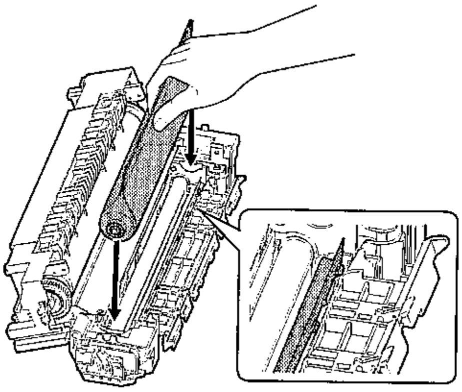


5) Remove the bearing from the fusing roller (pressing).

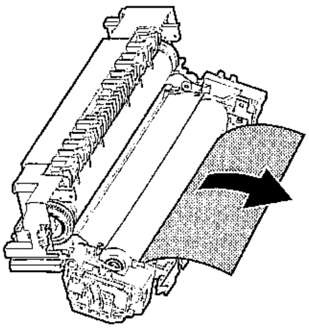


[Note for assembly (AR-M550N/U, AR-M620N/U)]

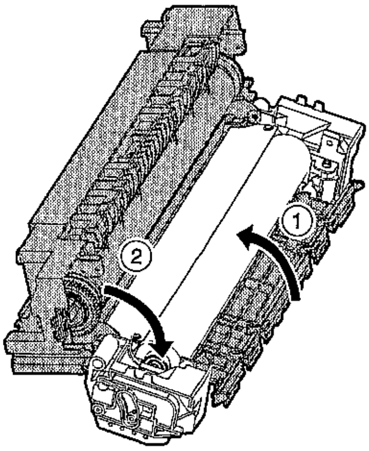
- Wind paper with the scraper tip without scratching the pressure roller, and insert it.
- When inserting, be careful not to deform the scraper.
- ⚠ When replacing the pressure roller or the scraper, they must be replaced together. (This note should be observed within the maintenance cycle.)
- When assembling the used pressure roller to the original position, set it in the original direction (F-R direction). If it is set in the reverse direction, it may not fit with the scraper, resulting in insufficient cleaning. If, however, the pressure roller and the scraper are replaced together with new one, there is no need to consider this note.



- Engage the bearings F/R with the pressure lever concaves and pull out the paper from the scraper side.



- When closing the unit, first close the upper unit from the above in order to prevent against deform of the scraper.



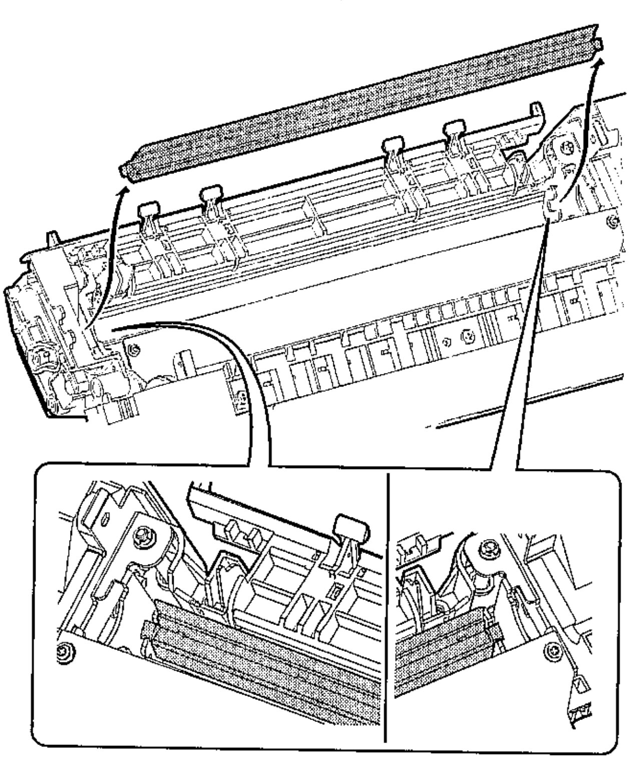
⚠ NOTE: Avoid rattling of the pressure roller and the scraper. If not, the scraper may be deformed and the pressure roller may be damaged.

[Note for installation (AR-M700N/U)]

- When installing the pressure roller to the fusing unit, be careful not to damage the cleaning blade.
  If the cleaning plate would be deformed, copy dirt would be resulted.

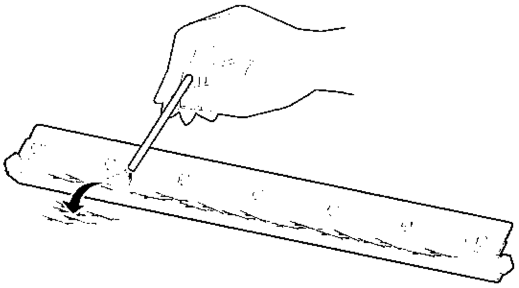
a-9. Cleaning scraper (AR-M550N/U, AR-M620N/U)

1) Remove the fusing unit. (See "a. Fusing unit" in this section)
2) Open the fusing unit.
3) Remove the pressure roller unit.
4) Remove the fusing cleaning scraper.



[Cleaning]

- Clean and remove paper dust and toner remained in the concave of the scraper holder.



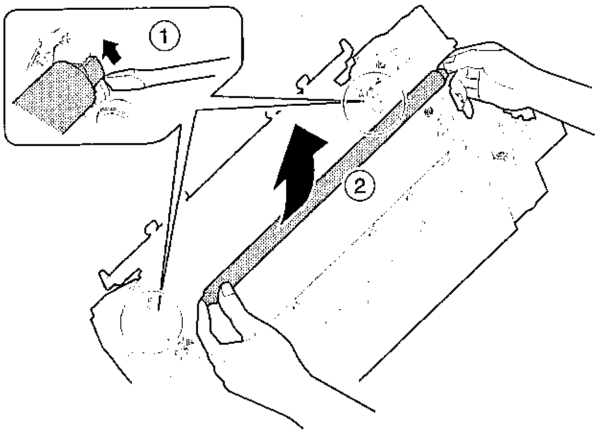
▲ NOTE:

- When replacing the scraper, replace the whole scraper unit. In addition, when replacing the scraper, the pressure roller must be also replaced.
- Do not remove paper dust from the edge of the scraper. If paper dust is forcibly removed, uneven contact occurs between the pressure roller and the scraper, resulting in insufficient cleaning.

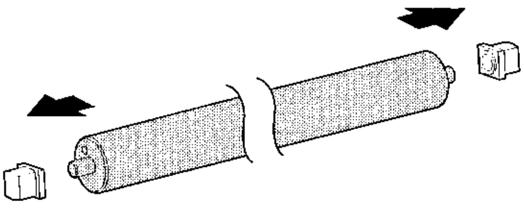
▲ a-10. Oil roller (AR-M700N/U)

a-11. CL roller bearing (AR-M700N/U)

1) Remove the fusing unit. (See "a. Fusing unit" in this section)
2) Open the fusing unit. (See "a-3. Heat roller" in this section)
3) Remove the pressure roller unit. (See "a-8. Pressure roller" in this section)
4) Remove the oil roller unit.



5) Remove the CL roller bearings from the oil roller.

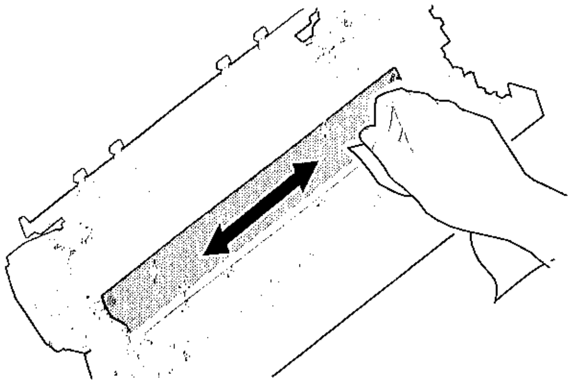


NOTE: When installing the oil roller, set to that "R" mark and "↑" mark are on the rear side of the unit.

NOTE: When handling the oil roller, be careful not to deform or damage the rubber section. When cleaning the oil roller, do not rub forcibly in order not to break the surface tube or the internal rubber.

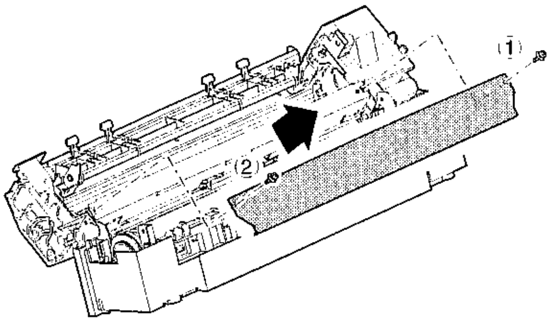
a-12. Paper guide

1) Remove the fusing unit. (See "a. Fusing unit" in this section)
2) Release the pressure. (See "a-4. Heater lamp 1" in this section)
3) ▲ Remove the screw to open the fusing unit.
4) Clean the paper guide.



▲ a-13. Cleaning plate (AR-M700N/U)

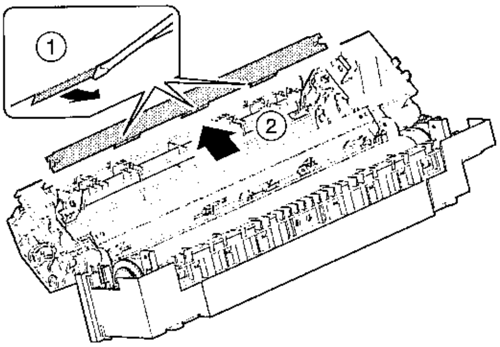
1) Remove the fusing unit. (See "a. Fusing unit" in this section)
2) Open the fusing unit. (See "a-3. Heat roller" in this section)
3) Remove the pressure roller unit. (See "a-8. Pressure roller" in this section)
4) Remove the paper guide.



NOTE:

- Tighten the screws in the sequence shown above.
- Do not allow clearance at the center of the paper guide.
- If copy dirt is heavy, replace it.
- Clean and remove paper dust from the cleaning roller plate and its surrounding.
- Do not remove toner and paper dust from the mesh section of the cleaning plate. If they are removed forcibly, the cleaning plate may be deformed, resulting in insufficient cleaning.

5) Remove the cleaning roller plate.



[Note for installation]

- Be careful not to deform the cleaning plate. If the cleaning plate would be deformed, insufficient cleaning would be resulted.

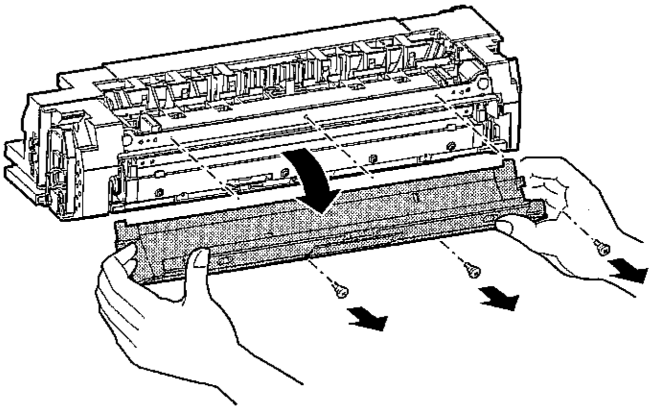
a-14. Sub heat roller

a-15. Sub heat roller bearing

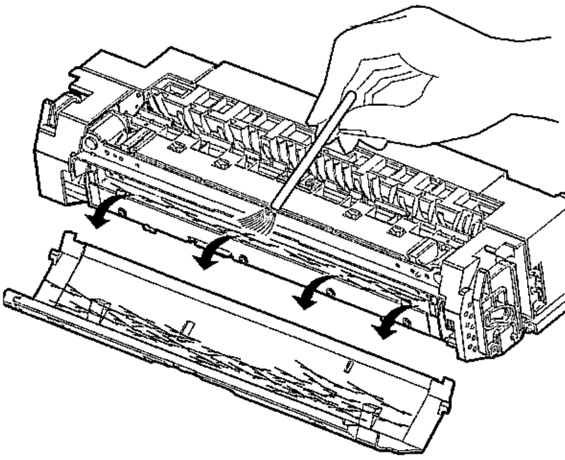
a-16. Thermistor (lower)

a-17. Sub heater lamp

1) Remove the fusing unit. (See "a. Fusing unit" in this section)
2) Release the pressure. (See "a-4. Heater lamp 1" in this section)
3) Lay the unit on its side to prevent paper dust from dispersing, and remove the lower cover.

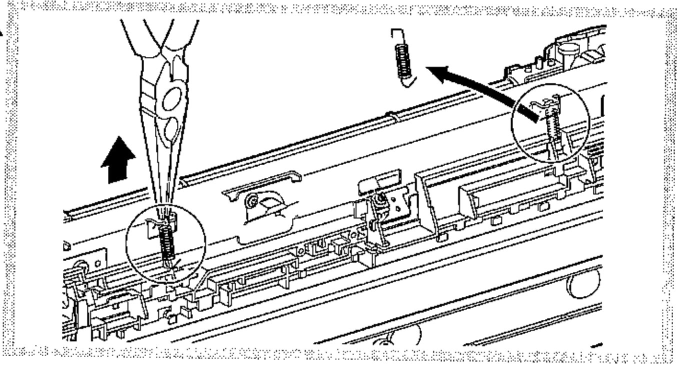


4) Clean paper dust.

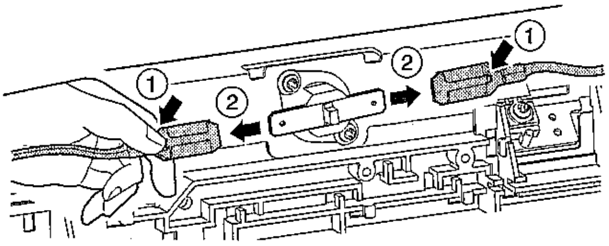


5) Remove the spring.

⚠

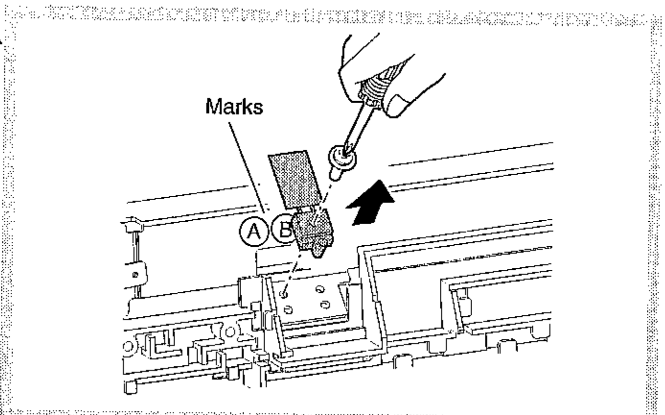


6) Remove the thermostat terminals.



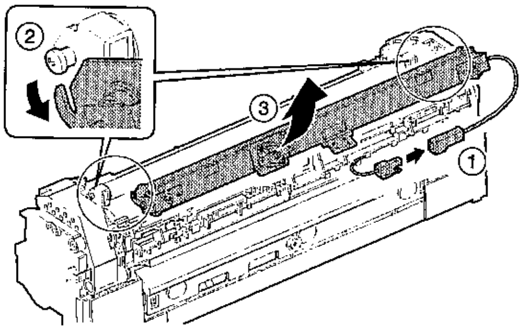
7) Remove the thermistor.

⚠

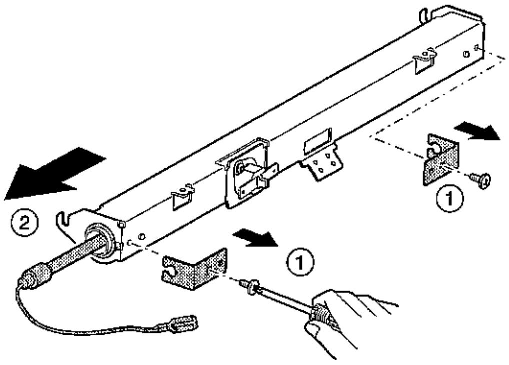


NOTE: If the picture quality may be degraded damaged by the roller damage, change the installing position to Ⓑ.

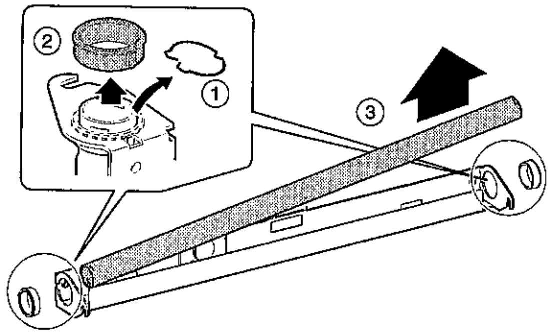
8) Remove the sub heat roller unit.



9) Remove the lamp fixture.



10) Remove the sub heater lamp.
11) Remove the ring, and remove the second heater roller bearing and the second heater roller.

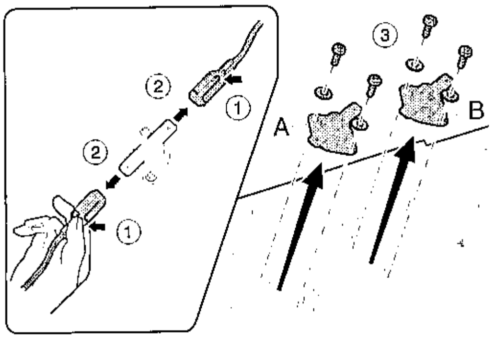


a-18. Thermostat 1

a-19. Thermostat 2

1) Remove the fusing unit. (See "a. Fusing unit" in this section)
2) Remove the thermostat 1 (A) and the thermostat 2 (B).

⚠



[Cleaning]

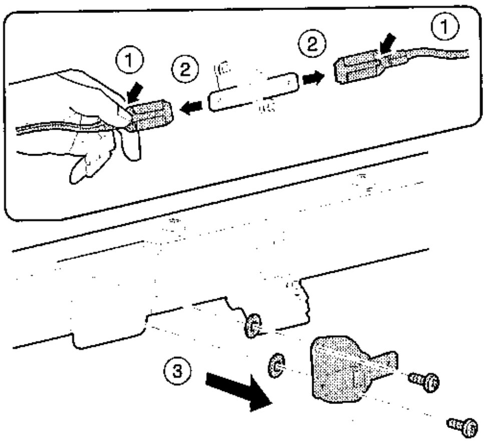
When there is paper dust or foreign material on the heat sensitive surface of the thermostat, clean and remove dust or foreign material.

NOTE: Be careful not to mistake the install position of the washer.

a-20. Thermistor 3

1) Remove the fusing unit. (See "a. Fusing unit" in this section)
2) Remove the heating unit.
3) Remove the thermostat 3.

⚠



[Cleaning]

When there is paper dust or foreign material on the heat sensitive surface of the thermostat, clean and remove dust or foreign material.

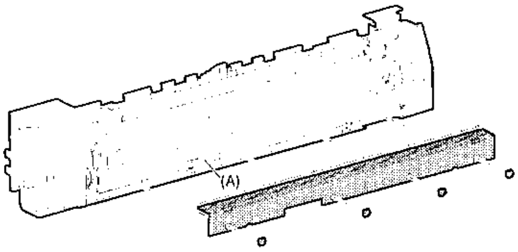
NOTE: Be careful not to mistake the install position of the washer.

⚠ a-21. Discharge brush

a-22. Cleaning sheet

1) Remove the fusing unit. (See "a. Fusing unit" in this section)
2) Lay the unit on its side to prevent paper dust from dispersing, and remove the lower cover. (See "a-14. Sub heat roller" in this section)
3) Clean paper dust. (See "a-14. Sub heat roller" in this section)
4) Remove the second heating roller cleaning holding plate.

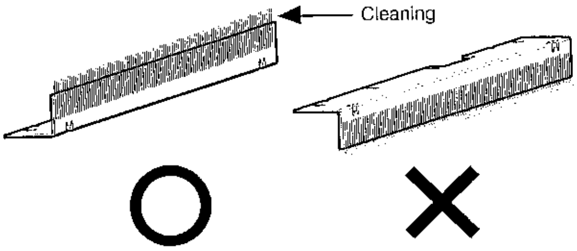
⚠



NOTE: When there are paper dusts or foreign materials at the port area (A), clean and remove.

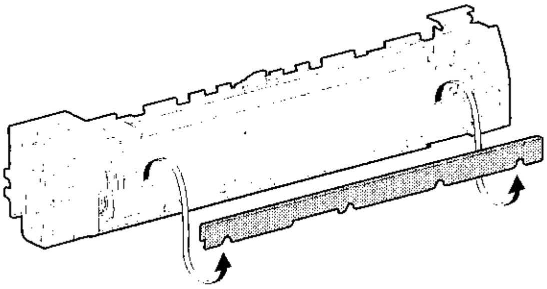
5) Do not lay the unit with the discharge brush on the lower side.

⚠



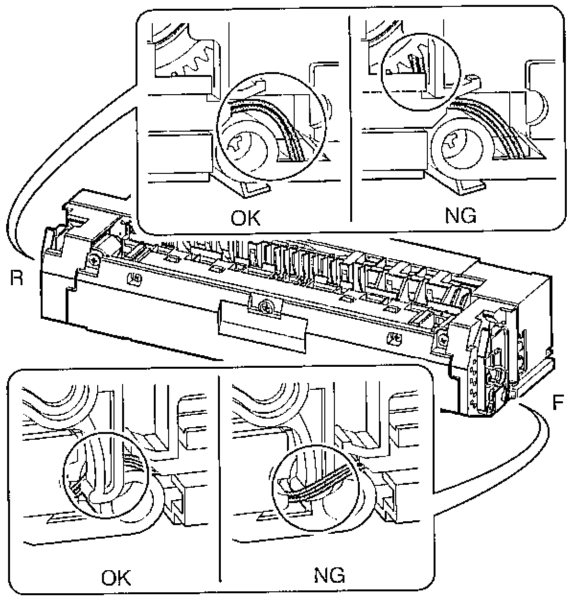
NOTE: Clean and remove paper dust. (Be careful not to deform the brush.)

6) Remove the cleaning sheet.
   - If the roller is cooled down, toner may be hardened to prevent removing.
   - Since cleaning is performed by applying a pressure by the spring, be careful not to deform it.
   - If copy dirt is heavy, replace the cleaning sheet with a new one.



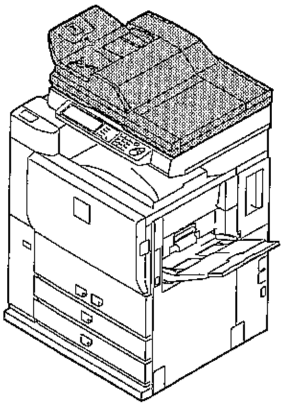
(CAUTION) Note for assembly of the fusing unit

⚠ Check that the harnesses on the hinge section (F frame side and R frame side) which connects the upper and the lower frames are in the normal state as shown below.



- If the harness on the F side extends out from the frame, repair it correctly.
- Arrange wiring as shown above so that the harness slack on the rear side does not extend to the gear side or dose not come too closely to the gear.

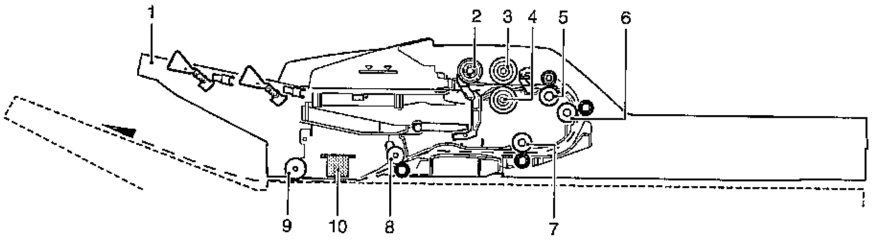
7. SPF section



A. General

Sheet documents are automatically fed and transported for continuous scanning.

The front and the back surfaces of duplex sheet documents can be scanned at a time.


1
2
3
4
5
6
9
10
8
7

No.	Name	Function
1	Document tray	Paper feed tray for documents. Max. loading capacity of documents: 150 sheets (80g/m²) or 19.5mm or less
2	Pickup roller	Picks up a document and transports it to the document feed roller.
3	Document feed roller	Feeds documents.
4	Separation roller	Separates paper to prevent against double feed.
5	No. 1 resist roller	Performs document feed resist.
6	Transport roller 1 (Drive)	Transports documents.
7	Transport roller 2 (Drive)	Transports documents.
8	No. 2 resist roller	Makes synchronization between the document lead edge and the scan start position.
9	Paper exit roller (Drive)	Discharges documents.
10	CIS unit	Scans the back surface of a document.

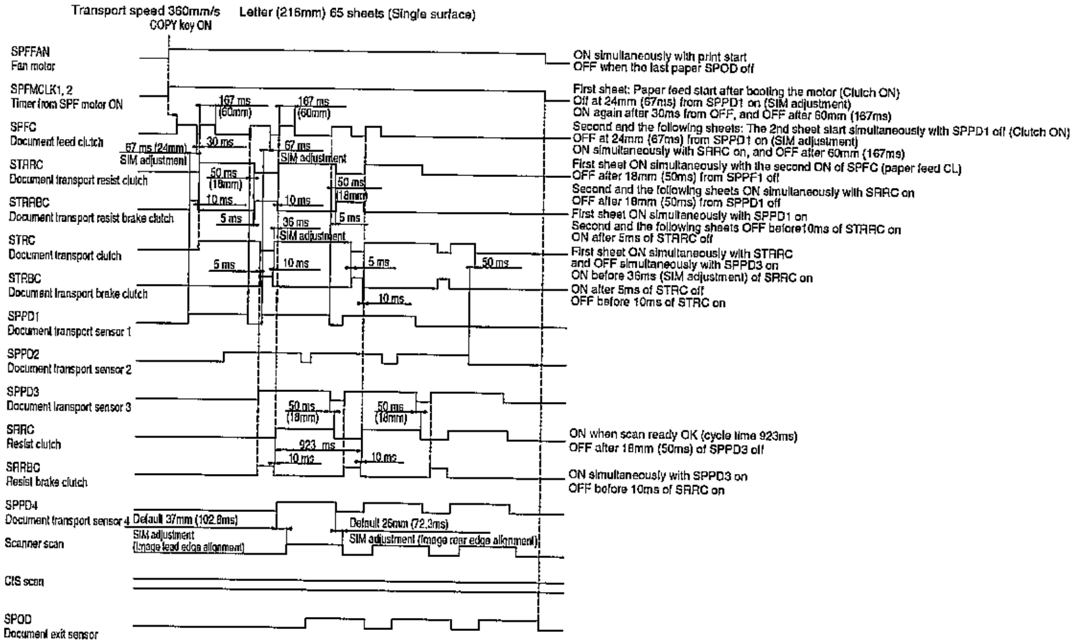
B. Operational descriptions

(1) Timing chart

To increase the document replacement speed, preliminary feed is performed for the second and the following documents when two or more documents of A4/Letter size or smaller are scanned.

For this purpose, each transport roller is provided with a clutch to perform independent control.

In addition, an electromagnetic brake is employed for each transport roller because it reduces the motor load when compared with the mechanical brake.


Transport speed 360mm/s
Letter (216mm) 65 sheets (Single surface)
COPY key ON
SPFFAN
Fan motor
SPFMCLK1, 2
Timer from SPF motor ON
SPFC
Document feed clutch
STRRC
Document transport resist clutch
STRRBC
Document transport resist brake clutch
STRC
Document transport clutch
STRBC
Document transport brake clutch
SPPD1
Document transport sensor 1
SPPD2
Document transport sensor 2
SPPD3
Document transport sensor 3
SRRC
Resist clutch
SRRBC
Resist brake clutch
SPPD4
Document transport sensor 4
Scanner scan
CIS scan
SPOD
Document exit sensor
167 ms (60mm)
167 ms (60mm)
67 ms (24mm)
SIM adjustment
30 ms
67 ms
SIM adjustment
50 ms (18mm)
50 ms (18mm)
10 ms
10 ms
5 ms
36 ms
SIM adjustment
5 ms
5 ms
10 ms
5 ms
50 ms
10 ms
50 ms (18mm)
50 ms (18mm)
923 ms
10 ms
10 ms
Default 37mm (102.8ms)
SIM adjustment (Image lead edge alignment)
Default 26mm (72.3ms)
SIM adjustment (Image rear edge alignment)
ON simultaneously with print start
OFF when the last paper SPOD off
First sheet: Paper feed start after booting the motor (Clutch ON)
Off at 24mm (67ms) from SPPD1 on (SIM adjustment)
ON again after 30ms from OFF, and OFF after 60mm (167ms)
Second and the following sheets: The 2nd sheet start simultaneously with SPPD1 off (Clutch ON)
OFF at 24mm (67ms) from SPPD1 on (SIM adjustment)
ON simultaneously with SRRC on, and OFF after 60mm (167ms)
First sheet ON simultaneously with the second ON of SPFC (paper feed CL)
OFF after 18mm (50ms) from SPPF1 off
Second and the following sheets ON simultaneously with SRRC on
OFF after 18mm (50ms) from SPPD1 off
First sheet ON simultaneously with SPPD1 on
Second and the following sheets OFF before10ms of STRRC on
ON after 5ms of STRRC off
First sheet ON simultaneously with STRRC
and OFF simultaneously with SPPD3 on
ON before 36ms (SIM adjustment) of SRRC on
ON after 5ms of STRC off
OFF before 10ms of STRC on
ON when scan ready OK (cycle time 923ms)
OFF after 18mm (50ms) of SPPD3 off
ON simultaneously with SPPD3 on
OFF before 10ms of SRRC on

▲ : Feb. 6 2004

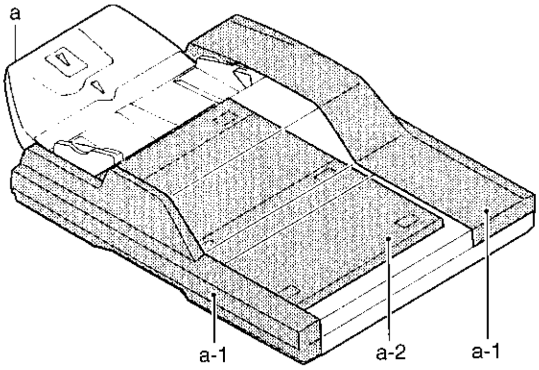
[External outfit section]

A. Maintenance and parts replacement

(1) Maintenance and parts replacement

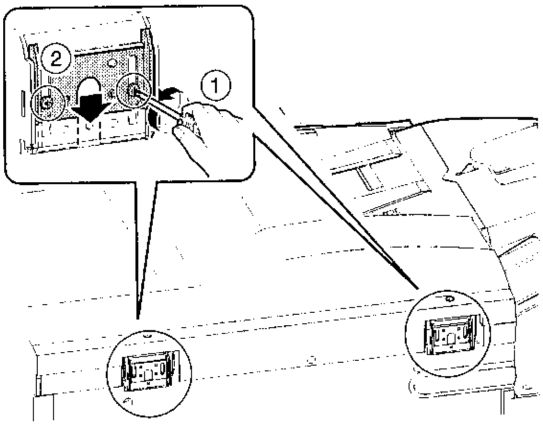
(Replacement parts)

No.	Unit	Parts	
a	SPF unit	1	Cabinet
		2	Document mat



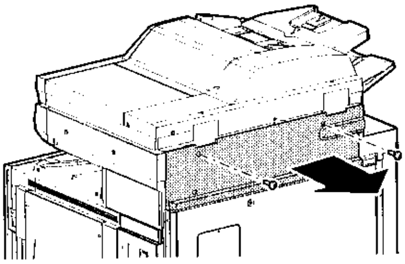
a. SPF unit

1) Push down the fixing plate.



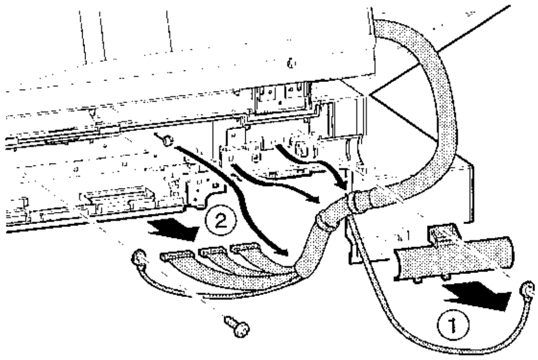
2) Remove the rear cover.

▲



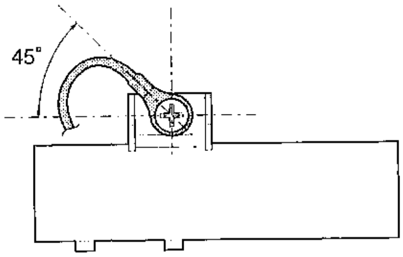
3) Remove the harness.

▲

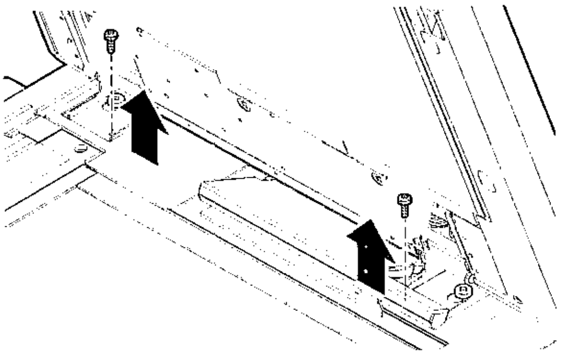


[Note for assembly]

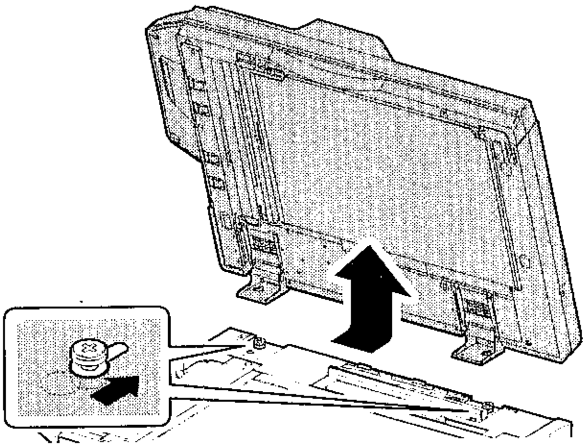
Install the earth terminal in the direction shown in the figure below.



4) Remove the fixing screw.



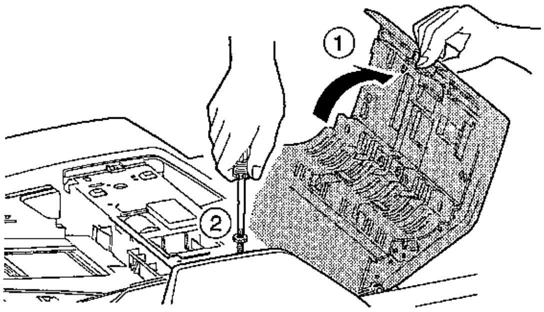
5) Remove the SPF.



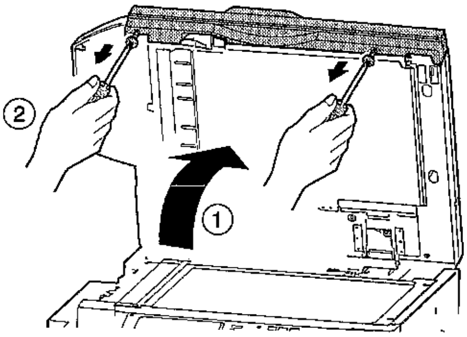
⚠ : Feb. 6 2004

a-1. Cabinet

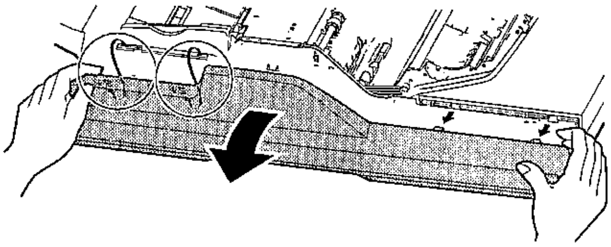
1) Open the cover and remove the screws.



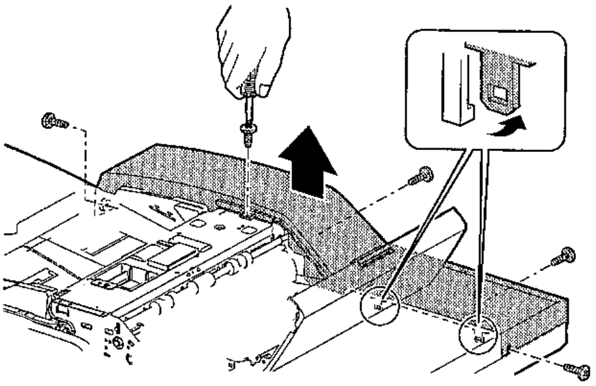
2) Open the SPF and remove the screws.



3) Unhook the claws on the tray side to remove the front cover.

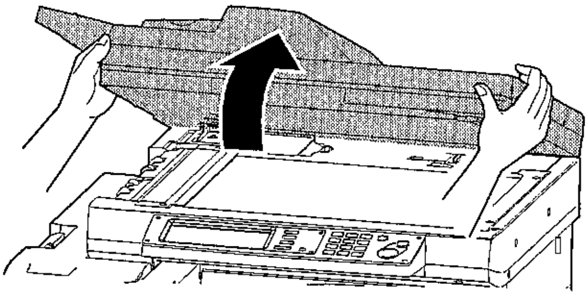


4) Remove the rear cover.



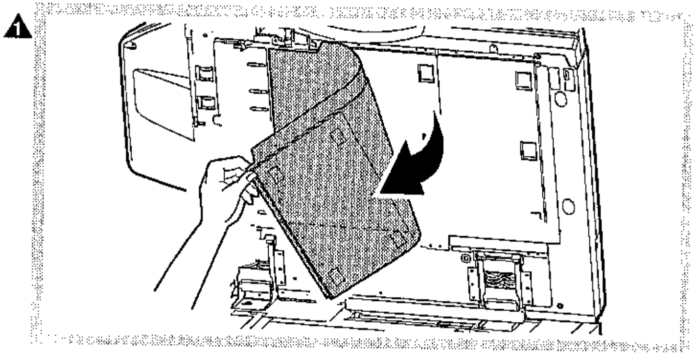
a-2. Document mat

1) Open the SPF.



2) Remove the mat.

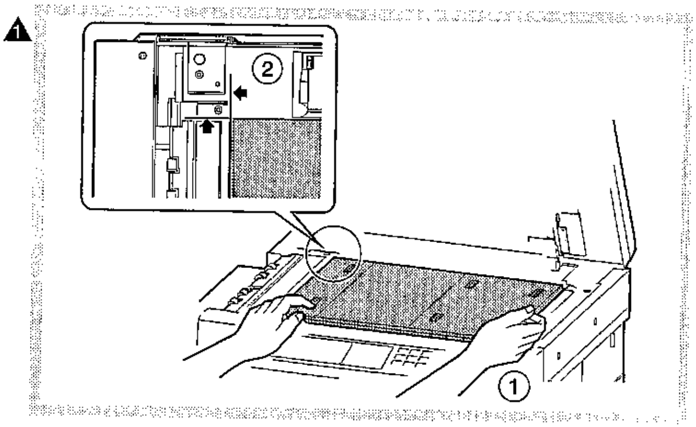
⚠

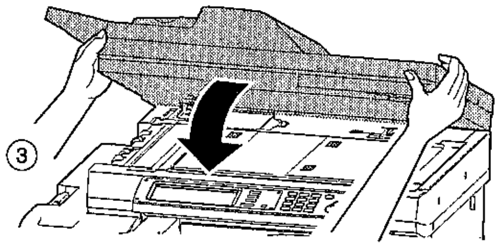


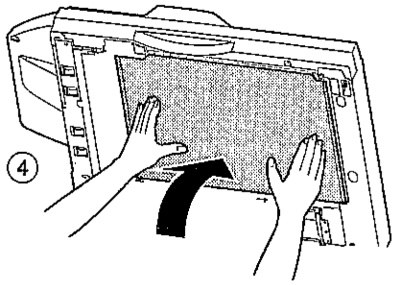
Caution when attaching

- Place the mat on the document base glass surface; close the SPF to attach the mat; then open again and apply pressure by hand to attach.

⚠

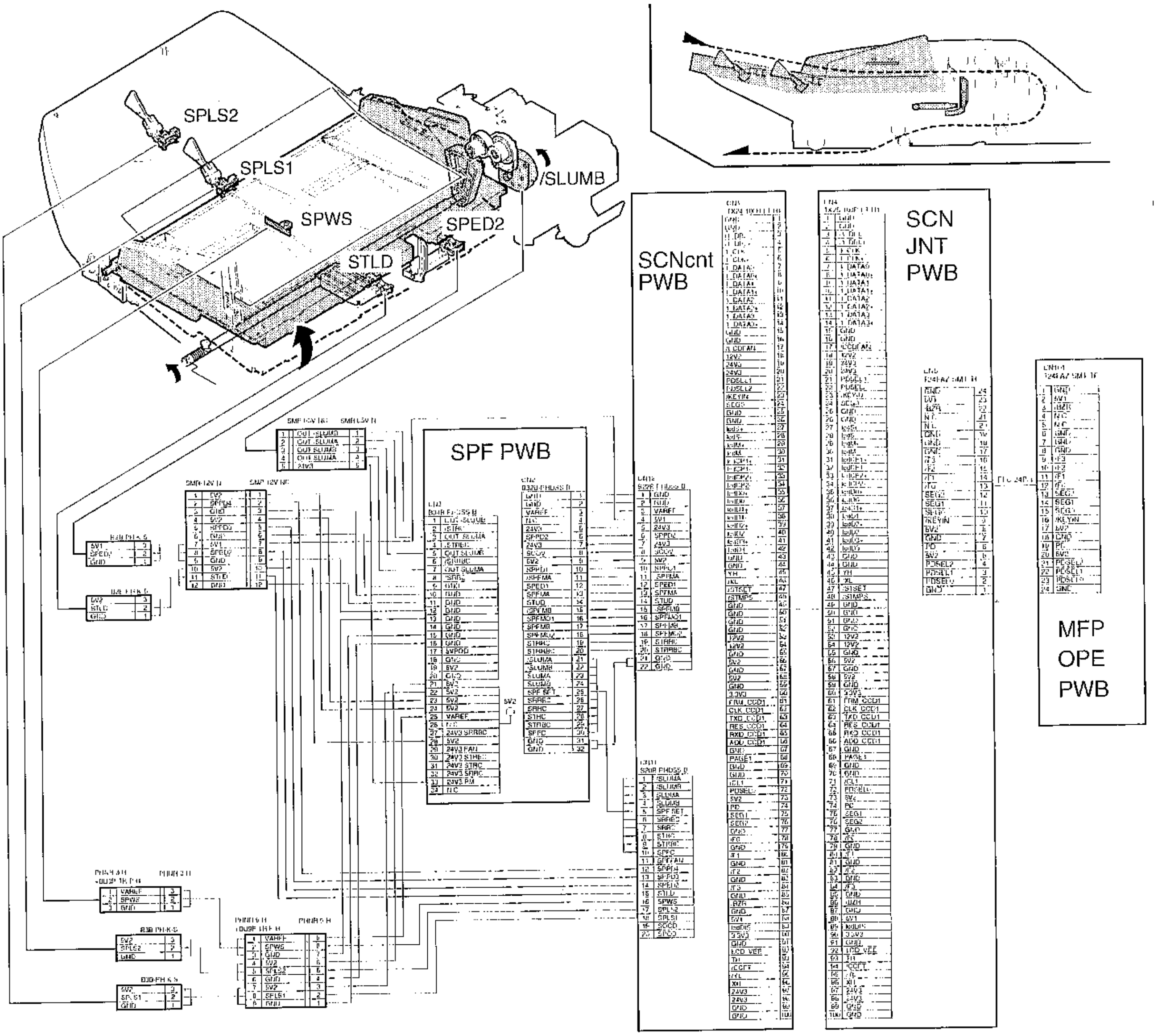






[Paper feed tray section]

A. Major parts and signal functions



Code	Signal name	Name	Function/Operation	Type	Model	Note
SPED2	SPED2	SPF document empty detector	SPF document empty detection	Transmission type		Sensor
SPLS1	SPLS1	SPF document length detector 1	SPF document length detection (Short)	Transmission type		Sensor
SPLS2	SPLS2	SPF document length detector 2	SPF document length detection (Long)	Transmission type		Sensor
SPWS	SPWS	SPF document size (Width) detection analog data detector	SPF document size (Width) detection	Volume resistor		Other detector
STLD	STLD	SPF document tray lower limit detector	SPF document tray lower limit detection	Transmission type		Sensor
/SLUMB	/SLUMB	SPF paper tray lift motor	Lifts up and down the SPF paper feed tray.	Stepping motor		

B. Operational descriptions

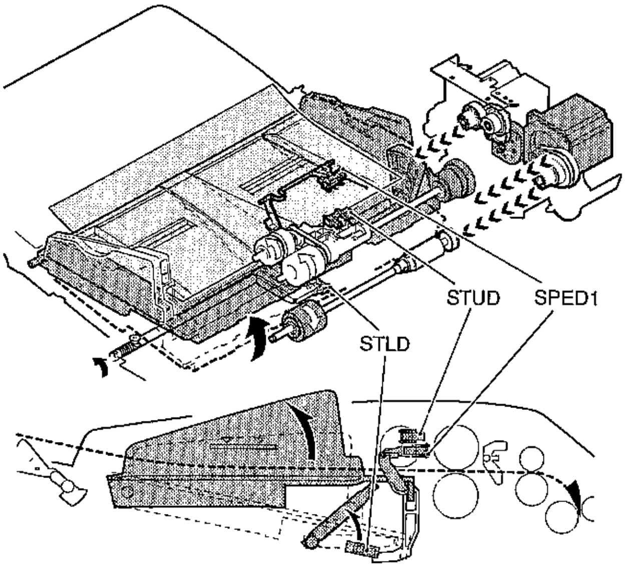
(1) Document tray lift operation

When a job is started, the document tray is lifted until a document at the top in the document tray turns on the document upper limit sensor (STUD).

The pressure between the document at the top in the document tray and the take-up roller is maintained at a constant level to improve the paper feed capability.

When paper to be scanned is exhausted, the document empty sensor (SPED1) turns off and the document tray moves down automatically until the lower limit sensor detects it.

Up and down movements of the document tray are performed by the lift motor (normal rotation, reverse rotation) and the lift gear.

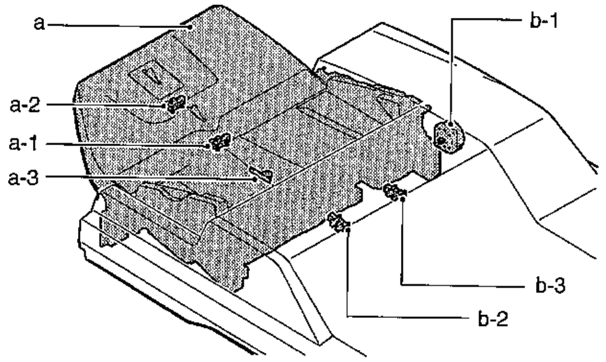


C. Maintenance and parts replacement

(1) Maintenance and parts replacement

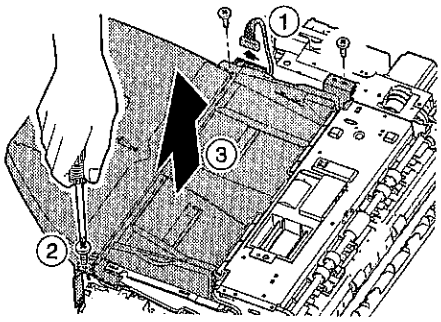
(Replacement parts)

No.	Unit	Parts	
a	Document tray unit	1	SPF document length detector 1
		2	SPF document length detector 2
		3	SPF document size (width) detection analog data detector
b		1	SPF paper tray lift motor
		2	SPF paper tray lower limit detector
		3	SPF document empty detector



a. Document tray unit

1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
2) Disconnect the connector, and remove the document tray unit.

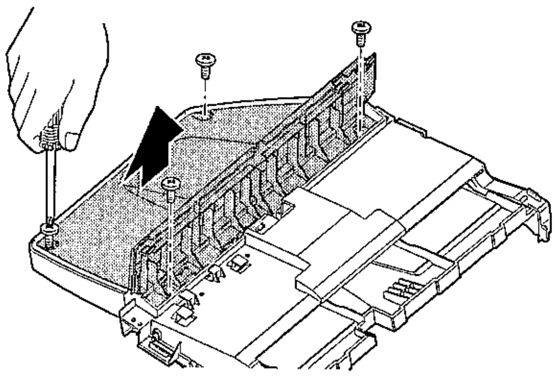


a-1. SPF document length detector 1

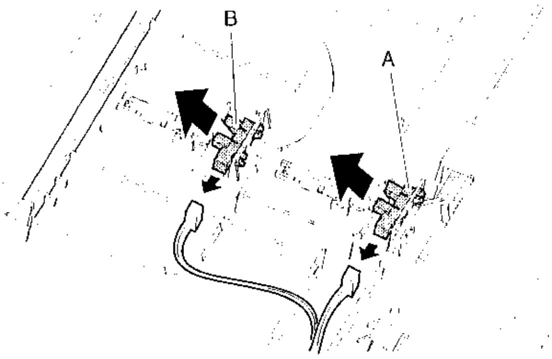
a-2. SPF document length detector 2

a-3. SPF document size (width) detection analog data detector

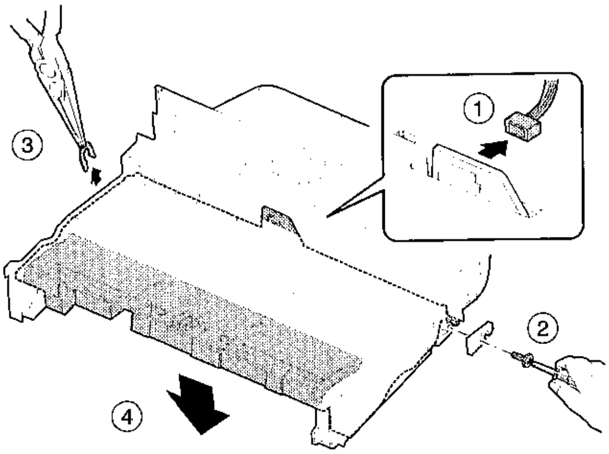
1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
2) Remove the document tray unit. (See "a. Document tray unit" in this section)
3) Remove the screw, and remove the cover.



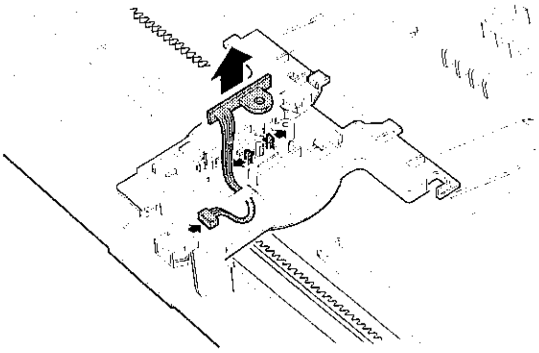
4) Disconnect the connector, and remove the SPF document length detector 1 (A) and the SPF document length detector 2 (B).



5) Remove the rotation tray unit.

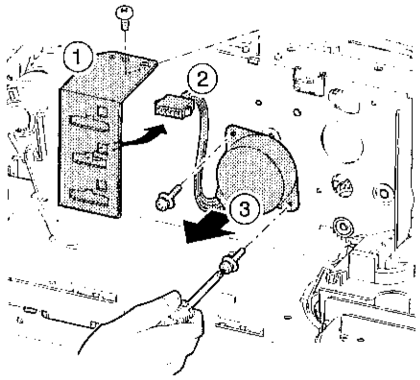


6) Remove the SPF document size (width) detection analog data detector.



b-1. SPF paper tray lift motor

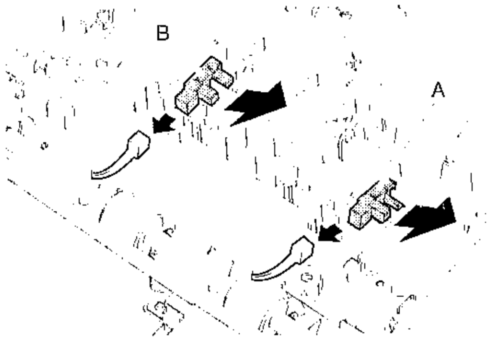
1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
2) Remove the SPF paper tray lift motor.



b-2. SPF paper tray lower limit detector

b-3. SPF document empty detector

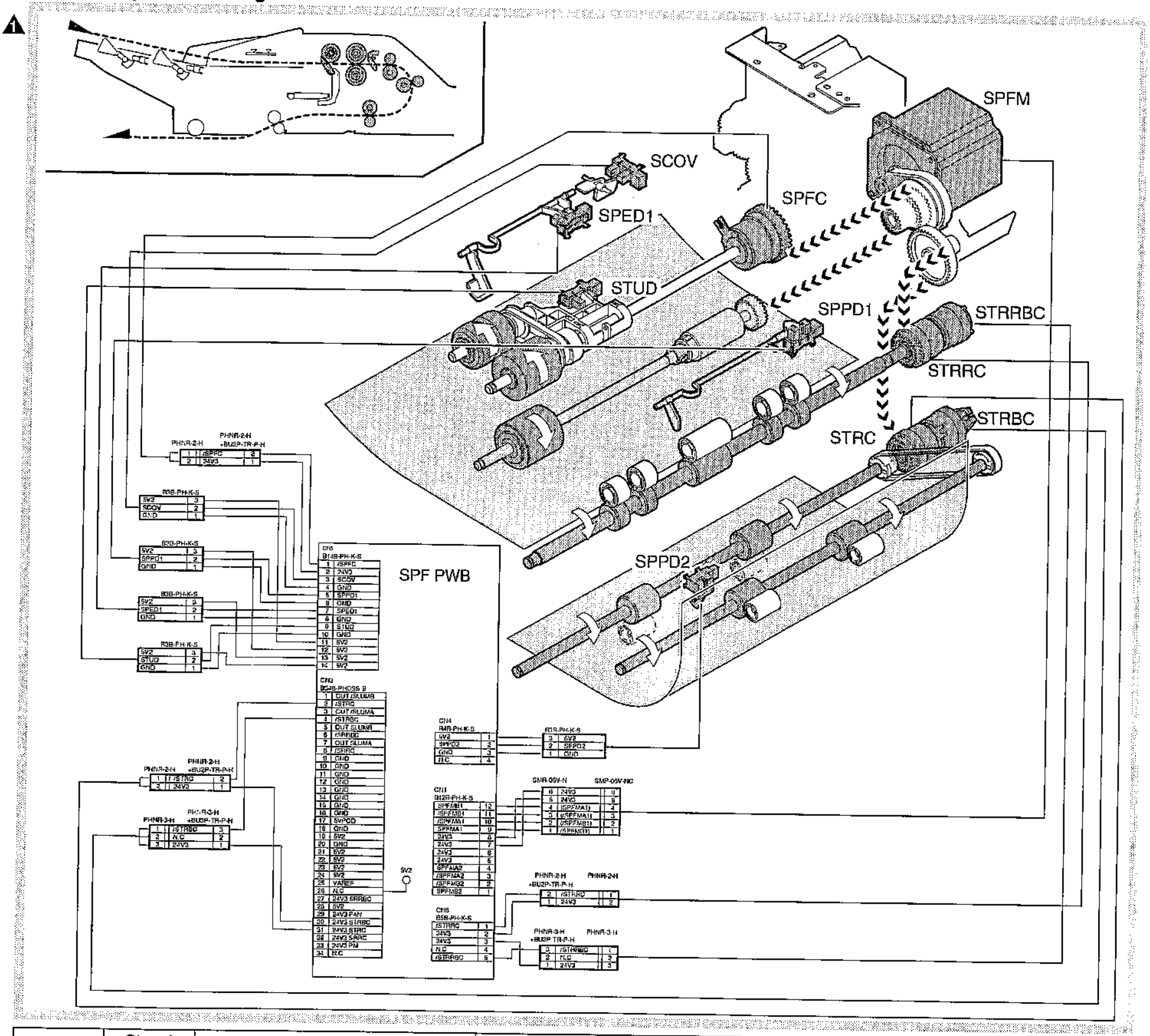
1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
2) Remove the document tray unit. (See "a. Document tray unit" in this section)
3) Disconnect the connector, and remove the SPF paper tray lower limit detector (A) and the SPF document empty detector (B).



[Paper feed/transport section]

A. Major parts and signal functions

⚠


SPFM
SCOV
SPFC
SPED1
STUD
SPPD1
STRRBC
STRRC
STRBC
STRC
SPPD2
SPF PWB
PHNR-2-H
PHNR-2-H +BU2P-TR-P-H
1 /SPFC 2
2 24V3 1
B3B-PH-K-S
5V2 3
SCOV 2
GND 1
B3B-PH-K-S
5V2 3
SPPD1 2
GND 1
B3B-PH-K-S
5V2 3
SPED1 2
GND 1
B3B-PH-K-S
5V2 3
STUD 2
GND 1
CN5
B14B-PH-K-S
1 /SPFC
2 24V3
3 SCOV
4 GND
5 SPPD1
6 GND
7 SPED1
8 GND
9 STUD
10 GND
11 5V2
12 5V2
13 5V2
14 5V2
CN3
BS48-PHDSS B
1 OUT /SLUMB
2 /STRC
3 OUT /SLUMA
4 /STRBC
5 OUT SLUMB
6 /SRRBC
7 OUT SLUMA
8 /SRRC
9 GND
10 GND
11 GND
12 GND
13 GND
14 GND
15 GND
16 GND
17 5VPOD
18 GND
19 5V2
20 GND
21 5V2
22 5V2
23 5V2
24 5V2
25 VAREF
26 N.C
27 24V3 SRRBC
28 5V2
29 24V3 FAN
30 24V3 STRBC
31 24V3 STRC
32 24V3 SRRC
33 24V3 PM
34 N.C
5V2
PHNR-2-H
PHNR-2-H +BU2P-TR-P-H
1 /STRC 2
2 24V3 1
PHNR-3-H
PHNR-3-H +BU3P-TR-P-H
1 /STRBC 3
2 N.C 2
3 24V3 1
CN4
B4B-PH-K-S
5V2 1
SPPD2 2
GND 3
N.C 4
B3B-PH-K-S
3 5V2
2 SPPD2
1 GND
CN1
B12B-PH-K-S
SPFMB1 12
/SPFMB1 11
/SPFMA1 10
SPFMA1 9
24V3 8
24V3 7
24V3 6
24V3 5
SPFMA2 4
/SPFMA2 3
/SPFMB2 2
SPFMB2 1
SMR-06V-N
SMP-06V-NC
6 24V3 6
5 24V3 5
4 (SPFMA1) 4
3 (/SPFMA1) 3
2 (/SPFMB1) 2
1 (SPFMB1) 1
CN8
B5B-PH-K-S
/STRRC 1
24V3 2
24V3 3
N.C 4
/STRRBC 5
PHNR-2-H +BU2P-TR-P-H
PHNR-2-H
2 /STRRC 1
1 24V3 2
PHNR-3-H +BU2P-TR-P-H
PHNR-3-H
3 /STRRBC 1
2 N.C 2
1 24V3 3

Code	Signal name	Name	Function/Operation	Type	Model	Note
SCOV	SCOV	SPF cover switch	SPF cover open/close detection	Transmission type		Sensor
SPFM	SPFM1	SPF paper feed motor, paper transport motor	Drives the paper feed roller and the transport roller. (SPF)	Stepping motor		
SPFC	SPFC	SPF paper feed clutch	SPF paper feed section roller ON/OFF control	Electromagnetic clutch		
⚠ STRRC	STRRC	SPF NO.1 resist roller clutch	SPF resist roller ON/OFF control	Electromagnetic clutch		
⚠ STRRBC	STRRBC	SPF No. 1 resist roller brake clutch	SPF resist roller braking	Electromagnetic clutch		
STRC	STRC	SPF paper transport roller 2 clutch	SPF transport roller 2 ON/OFF control	Electromagnetic clutch		
STRBC	STRBC	SPF paper transport roller 2 brake clutch	SPF transport roller 2 braking	Electromagnetic clutch		
SPED1	SPED1	SPF document upper limit detector	SPF document upper limit detection	Transmission type		Sensor
SPPD1	SPPD1	SPF document paper pass detector 1	SPF document paper pass detection 1	Transmission type		Sensor
SPPD2	SPPD2	SPF document paper pass detector 2	SPF document paper pass detection 2	Transmission type		Sensor
STUD	STUD	SPF document tray upper limit detector	SPF document tray upper limit detection	Transmission type		Sensor

⚠ : Feb. 6 2004

B. Operational descriptions

(1) Document feed, transport, scan, paper exit, and operating speed

The document fed by the take-up roller is sent through the paper feed roller and the transport roller to the resist roller section.

In the resist roller section, the document lead edge and the scan start position are synchronized. The document is transported to the scan section. After being scanned, the document discharged to the document exit tray by the paper exit roller.

The document transport speed varies depending on the scan mode and the scan magnification ratio as shown below.

Scan mode	Magnification ratio	Document transport speed
Single surface scan	Up to 117%	360mm/sec
Single surface scan	118% or above	220mm/sec
Duplex scan	Up to 100%	220mm/sec
Duplex scan	101% or above	110mm/sec

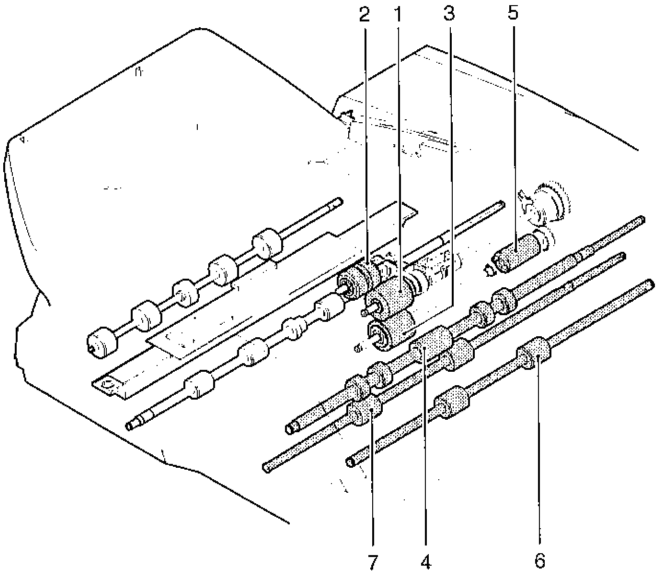
C. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ⊔: Shift position

			AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
			⚠ AR-M620U/N, AR-M700U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name		No.	Part name										
⚠ SPF	Document feed/ transport section	1	Document feed roller	×	×	×	×	×	×	×	×	×	(Note 1)
		2	Paper pickup roller (SPF)	×	×	×	×	×	×	×	×	×	(Note 1)
		3	Separation roller	×	×	×	×	×	×	×	×	×	(Note 1)
		4	No. 1 resist roller	○	○	○	○	○	○	○	○	○	
		5	Torque limiter		×	×	×	×	×	×	×	×	(Note 1)
		6	Transport roller 1	○	○	○	○	○	○	○	○	○	
		7	Transport roller 2	○	○	○	○	○	○	○	○	○	

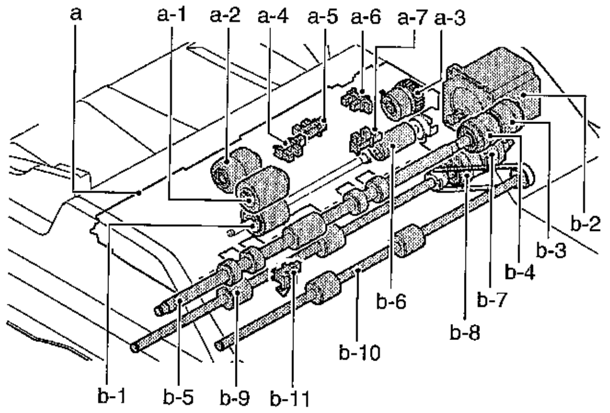
(Note 1) Replacement reference: For replacement, refer to each paper feed port counter value.
DSPF section: 100K or 1 year



(2) Maintenance and parts replacement

(Replacement parts)

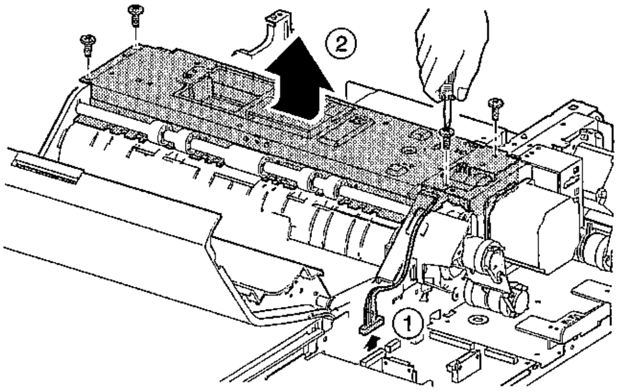
No.	Unit	Parts		
▲1 a	Paper feed unit	1	Document feed roller	✕
		2	Pickup roller	✕
		3	SPF paper feed clutch	
		4	SPF document tray upper limit detector	
		5	SPF document upper limit detector	
		6	SPF cover switch	
		7	SPF document paper pass detector 1	
▲1 b		1	Separation roller	✕
		2	SPF paper feed/paper transport motor	
		3	SPF resist roller brake clutch	
		4	SPF resist roller clutch	
		5	No. 1 resist roller (Drive)	○
		6	Torque limiter	✕
		7	SPF paper transport roller 2 brake clutch	
		8	SPF paper transport roller 2 clutch	
		9	Transfer roller 2 (Drive)	○
		10	Transport roller 1 (Drive)	○
		11	SPF document paper pass detector 2	



a. Paper feed unit

1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")

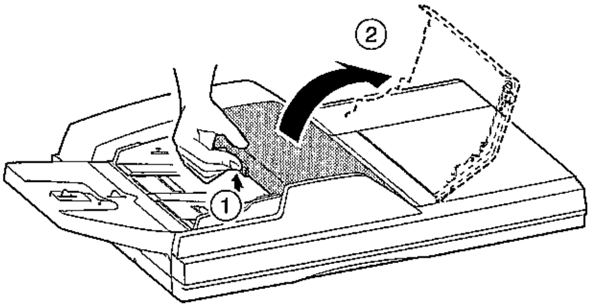
2) Disconnect the connector, and remove the paper feed unit.



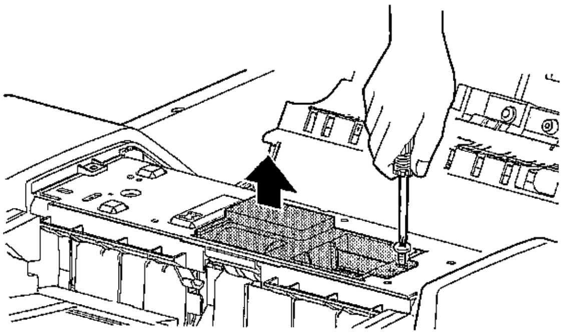
a-1. Paper feed roller

a-2. Pickup roller

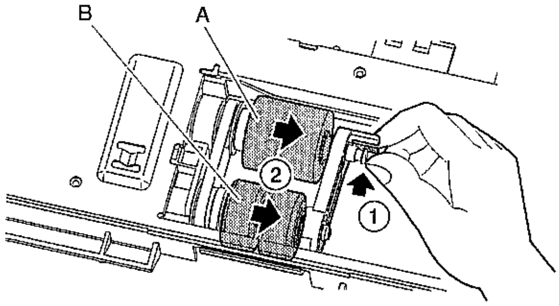
1) Pull up the lever and open the upper cover.



2) Remove the roller cover.



3) Remove the pawl and remove the rollers.



a-3. SPF paper feed clutch

a-4. SPF document tray upper limit detector

a-5. SPF document upper limit detector

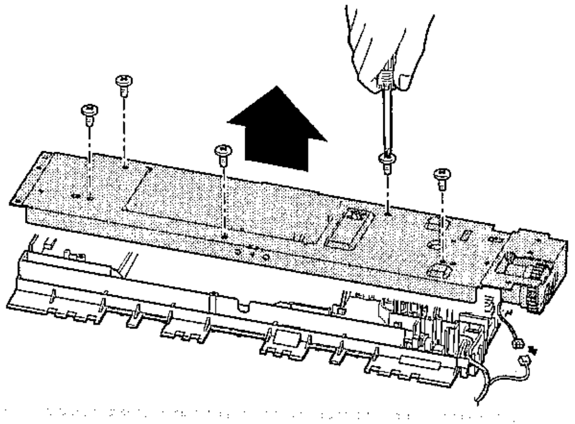
a-6. SPF cover switch

a-7. SPF document paper pass detector 1

1) Remove the cabinet. (See "a-2. Document mat" in the previous section, "[External outfit section]")

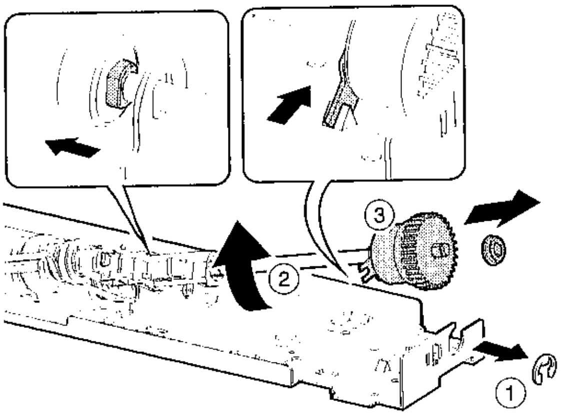
2) Remove the document feed tray unit. (See "a. Paper feed unit" in this section)

▲1 3) Remove the cover and disconnect the connector.

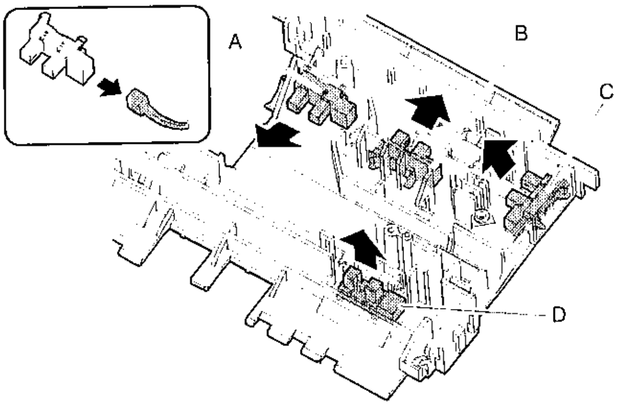


⚠ : Feb. 6 2004

4) Remove the E-ring, and remove the SPF paper feed clutch.

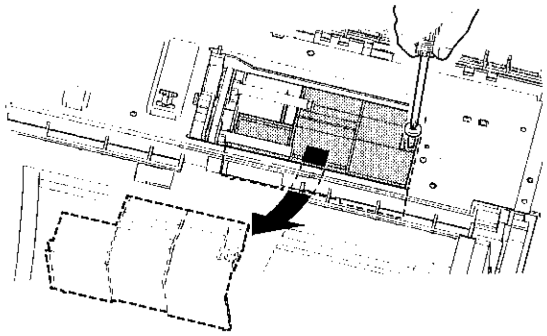


5) Disconnect the connector, and remove the SPF document tray upper limit detector (A), the SPF document upper limit detector (B), the SPF cover switch (C), and the SPF document paper pass detector 1 (D).

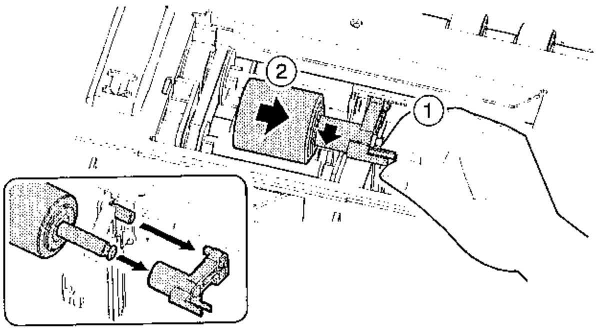


b-1. Separation roller

1) Remove the paper feed roller and the pickup roller. ("a-1. Paper feed roller" and "a-2. Pickup roller" in this section.)
2) Remove the cover.



3) Unhook the claw to remove the support. Remove the reverse roller.

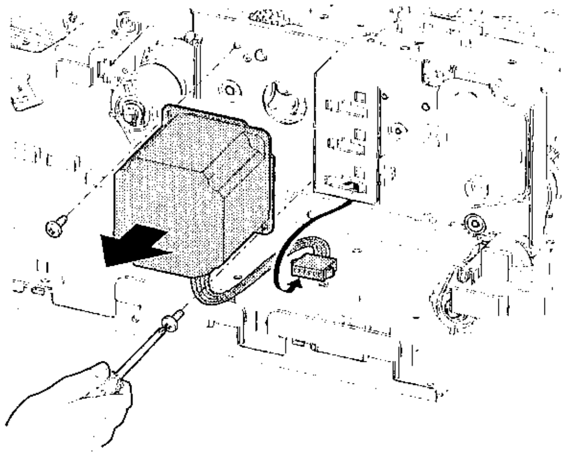


[Caution when attaching]

- Rotate the roller into the pin slot.

b-2. SPF paper feed/paper transport motor

1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
2) Remove the SPF paper feed/paper transport motor.

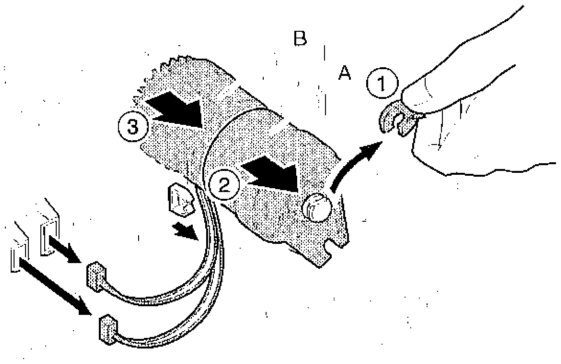


b-3. SPF resist roller brake clutch

b-4. SPF resist roller clutch

1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")

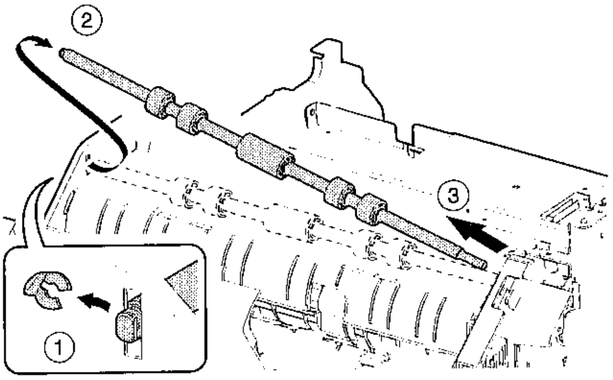
⚠ 2) Disconnect the connector, and remove the clamp, the plastic E-ring, the SPF resist roller brake clutch (A), and the SPF resist roller clutch (B).



b-5. No. 1 resist roller (Drive)

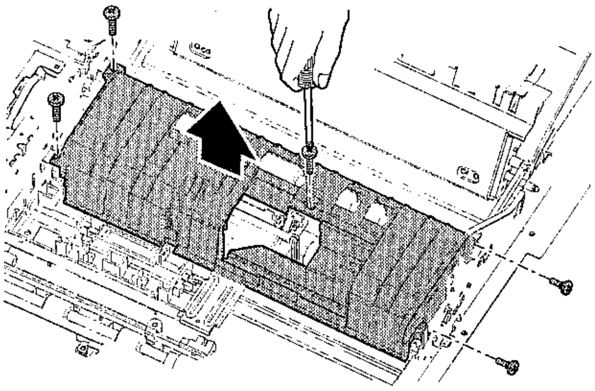
b-6. Torque limiter

1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
2) Remove the document feed tray unit. (See "a. Paper feed unit" in this section)
3) Remove the plastic E-ring in the arrow direction and remove the No. 1 resist roller idle.

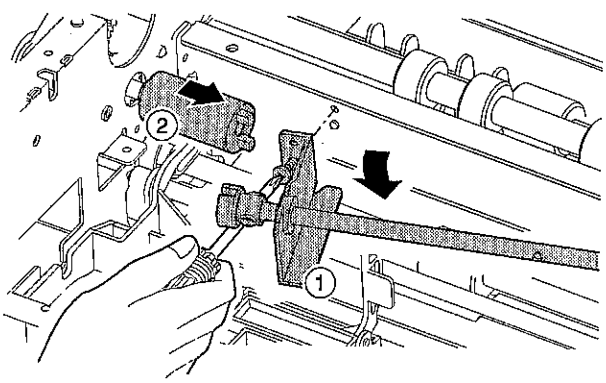


4) Remove the separation roller. (Refer to "b-1. Separation roller" in this section.)

5) Remove the paper feed paper guide lower unit in the arrow direction.

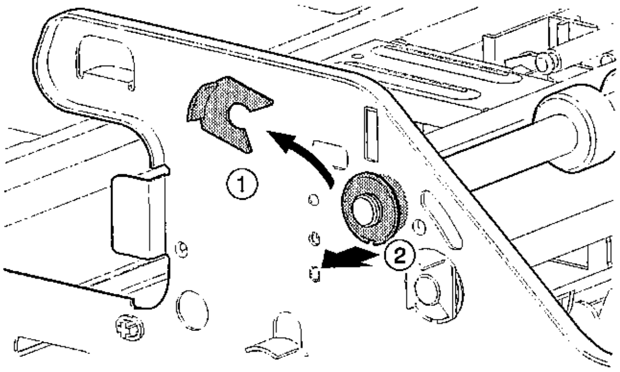


6) Remove the bearing metal fixture, and remove the torque limiter.

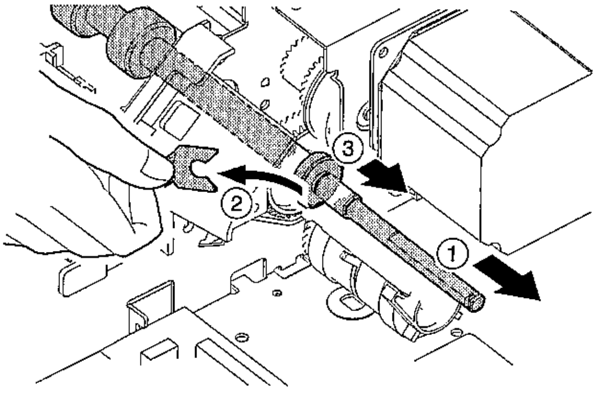


7) Remove the electromagnetic clutch. (See "b-3. SPF resist roller brake clutch" in this section)

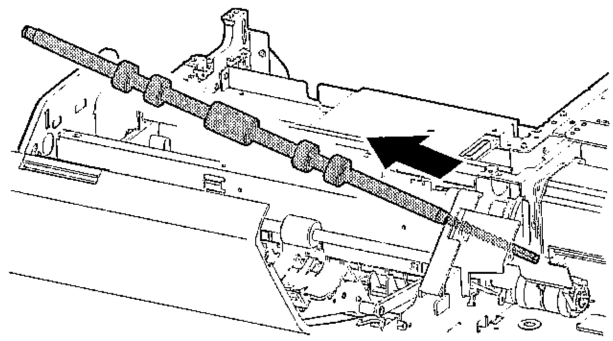
8) Remove the plastic E-ring to remove the bearing.



9) Slide the No. 1 resist roller drive in the arrow direction, and remove the plastic E-ring.



10) Remove the No. 1 resist roller drive in the arrow direction.

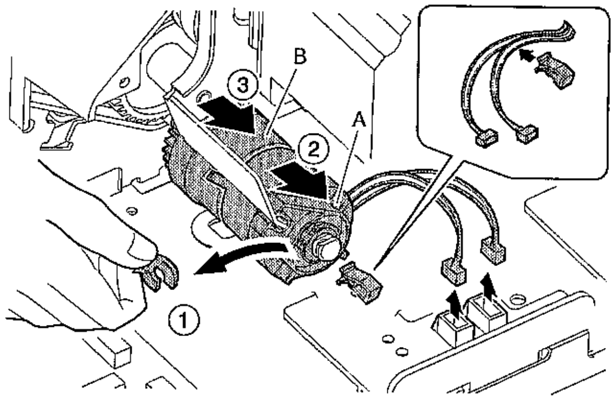


b-7. SPF paper transport roller 2 brake clutch

b-8. SPF paper transport roller 2 clutch

1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")

2) Disconnect the connector, and remove the plastic E-ring, the SPF paper transport roller 2 brake clutch (A), and the SPF paper transport roller 2 clutch (B).



b-9. Transport roller 2 (Drive)

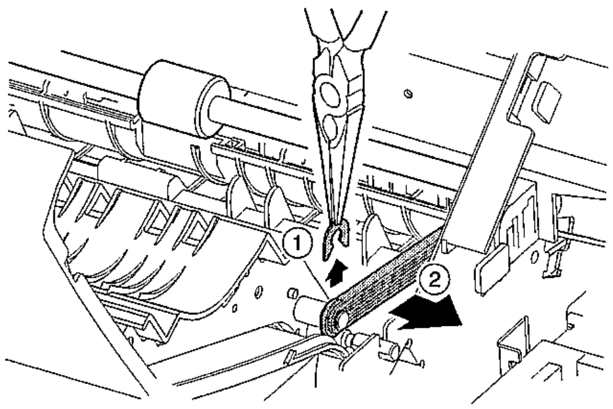
b-10. Transport roller 1 (Drive)

1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")

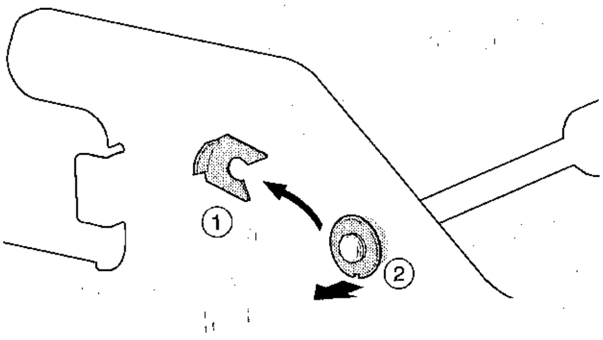
2) Remove the document feed tray unit. (See "a. Paper feed unit" in this section)

3) Remove the No. 1 resist roller idle and the paper feed paper guide lower unit. (See "b-5. No. 1 resist roller (Drive)" in this section)

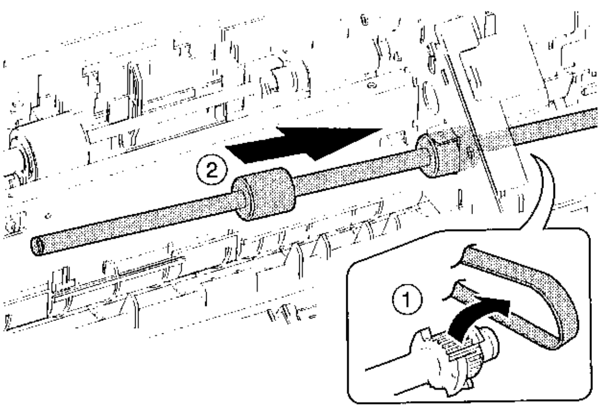
4) Remove the plastic E-ring on the cover side to remove the link lever.



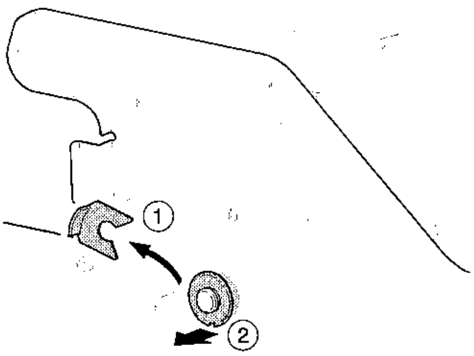
3) Remove the plastic E-ring to remove the bearing.



6) Remove the belt, and remove the transport roller 1 in the arrowed direction.

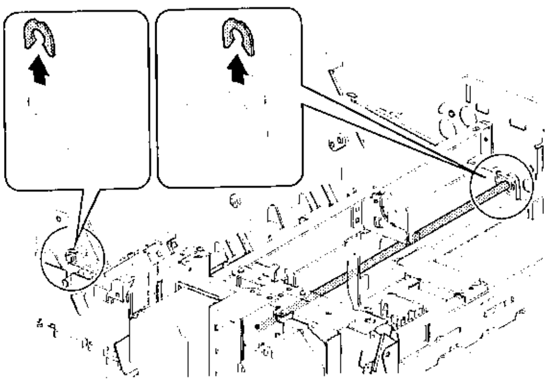


7) Remove the plastic E-ring to remove the bearing.

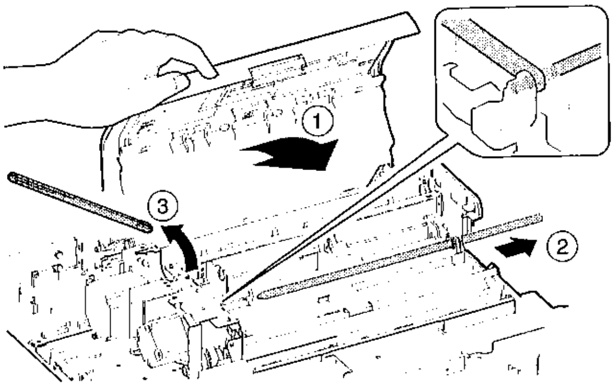


8) Remove the electromagnetic clutch. (See "b-7. SPF paper transport roller 2 brake clutch" and "b-8. SPF paper transport roller 2 clutch" in this section.)

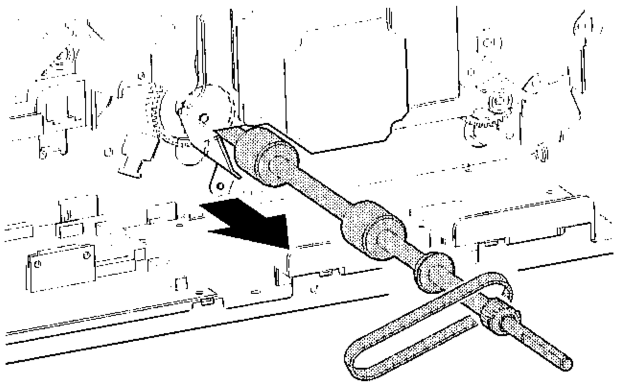
9) Remove the plastic E-rings on the shaft side.



10) Remove the lever and shaft.

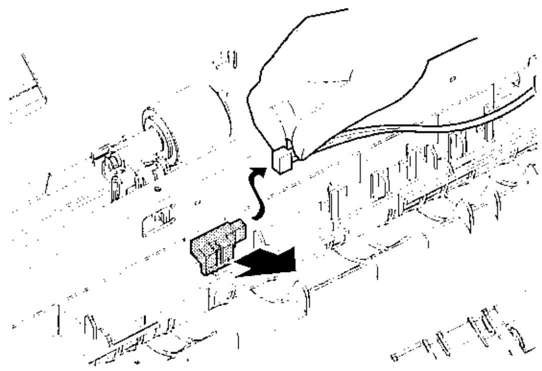


11) Remove the transport roller 2 in the arrowed direction.



b-11. SPF document paper pass detector 2

1) Remove the cabinet. (See "a-1. Cabinet" in "[External outfit section]")
2) Remove the document feed tray unit. (See "a. Paper feed unit" in this section)
3) Remove the No. 1 resist roller idle, the paper feed paper guide lower unit, and the No. 1 resist roller drive. (See "b-5. No. 1 resist roller (Drive)" in this section)
4) Remove the transport roller 1 (Drive). (See "b-10. Transport roller 1 (Drive)" in this section)
5) Disconnect the connector, and remove the SPF document paper pass detector 2.

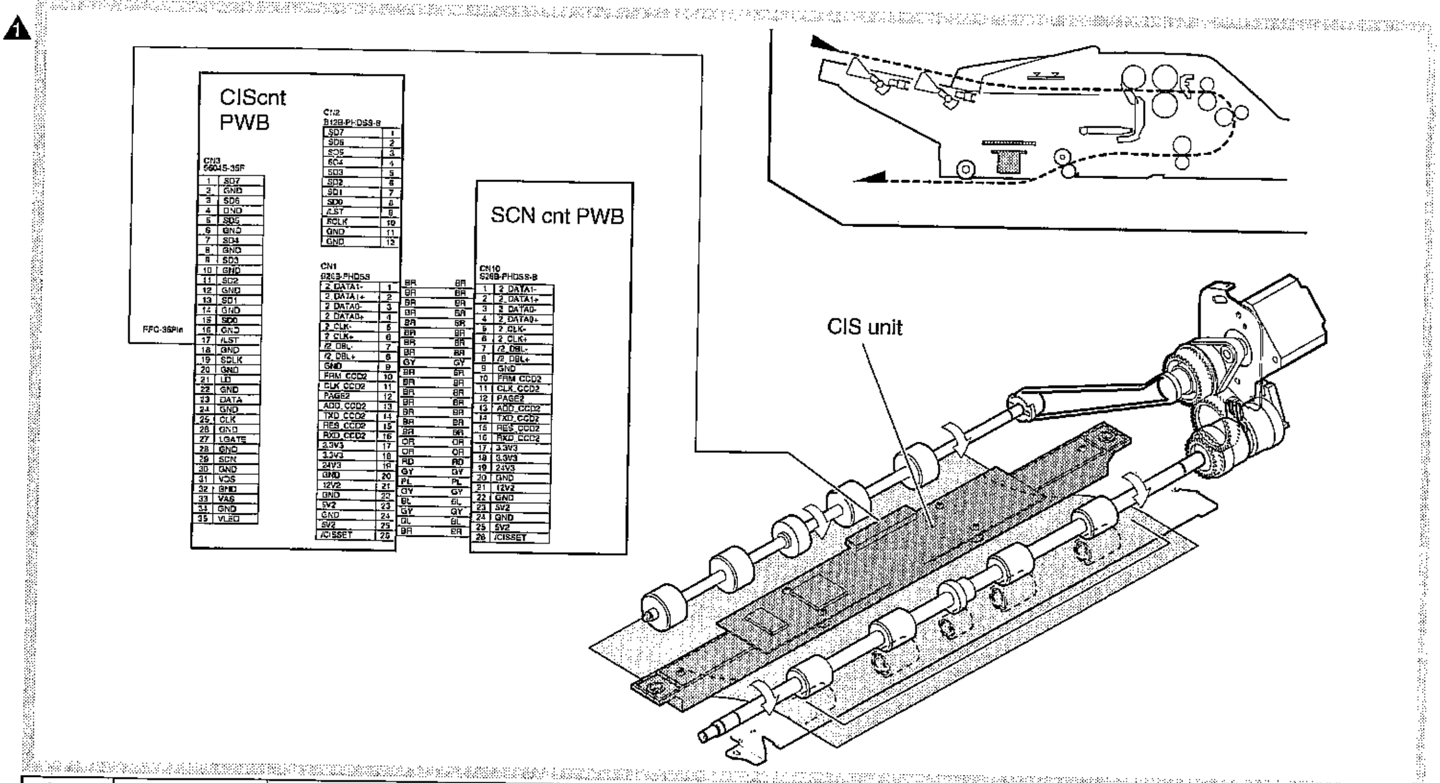


▲: Feb. 6 2004

[CIS section]

A. Major parts and signal functions

▲


CIScnt PWB
CN3
56045-35F
1 SD7
2 GND
3 SD6
4 GND
5 SD5
6 GND
7 SD4
8 GND
9 SD3
10 GND
11 SD2
12 GND
13 SD1
14 GND
15 SD0
16 GND
17 /LST
18 GND
19 SCLK
20 GND
21 LD
22 GND
23 DATA
24 GND
25 CLK
26 GND
27 LGATE
28 GND
29 SCN
30 GND
31 VDS
32 GND
33 VAG
34 GND
35 VLED
FFC-35Pin
CN2
B12B-PHDSS-B
SD7 1
SD6 2
SD5 3
SD4 4
SD3 5
SD2 6
SD1 7
SD0 8
/LST 9
SCLK 10
GND 11
GND 12
CN1
S26B-PHDSS
2_DATA1- 1
2_DATA1+ 2
2_DATA0- 3
2_DATA0+ 4
2_CLK- 5
2_CLK+ 6
/2_DBL- 7
/2_DBL+ 8
GND 9
FRM_CCD2 10
CLK_CCD2 11
PAGE2 12
ADD_CCD2 13
TXD_CCD2 14
RES_CCD2 15
RXD_CCD2 16
3.3V3 17
3.3V3 18
24V3 19
GND 20
12V2 21
GND 22
5V2 23
GND 24
5V2 25
/CISSET 26
BR
GY
OR
RD
PL
BL
SCN cnt PWB
CN10
S26B-PHDSS-B
1 2_DATA1-
2 2_DATA1+
3 2_DATA0-
4 2_DATA0+
5 2_CLK-
6 2_CLK+
7 /2_DBL-
8 /2_DBL+
9 GND
10 FRM_CCD2
11 CLK_CCD2
12 PAGE2
13 ADD_CCD2
14 TXD_CCD2
15 RES_CCD2
16 RXD_CCD2
17 3.3V3
18 3.3V3
19 24V3
20 GND
21 12V2
22 GND
23 5V2
24 GND
25 5V2
26 /CISSET
CIS unit

Code	Signal name	Name	Function/Operation	Type	Note
▲ CIS	CIS	CIS control PWB/CIS unit	Scans document images (back surface) and controls the CIS unit.		

B. Operational descriptions

(1) Document scan

CIS unit: The CIS (Contact Image Sensor) unit is the contact type image scan sensor, and is assembled to the SPF to scan document images.

The LED light in the CIS unit is radiated to a document, and the reflected light is passed through the lens to the photoelectric conversion elements to form images.

(Pixel: 7196 pixels, resolution: 600dpi)

The CIS and the CCD assembled in the lens unit allow simultaneous scan of duplex surfaces of a document.

C. Maintenance and parts replacement

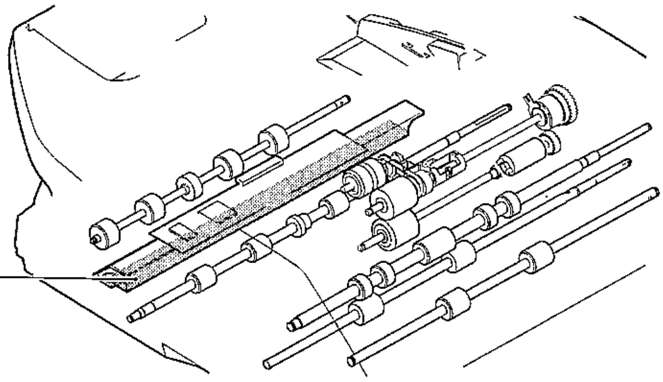
(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❏: Shift position

▲

Unit name		No.	Part name AR-M550U/N (PM: 250K) AR-M620U/N, AR-M700U/N (PM: 300K)	When calling	250K 300K	500K 600K	750K 900K	1000K 1200K	1250K 1500K	1500K 1800K	1750K 2100K	2000K 2400K	Remark
SPF	Document feed/ transport section	1	Exposure section (CIS unit)	○	○	○	○	○	○	○	○	○	

(Note 1) Replacement reference: For replacement, refer to each paper feed port counter value.
SPF section : 100K or 1 year

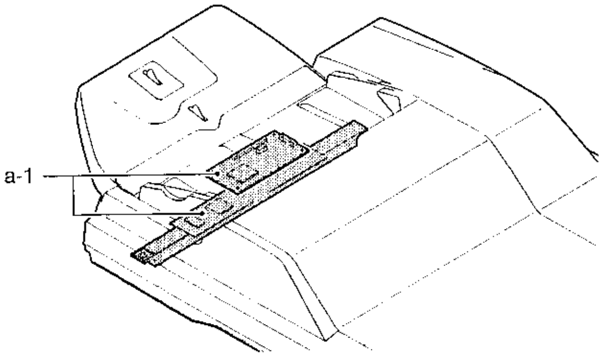


▲ : Feb. 6 2004

(2) Maintenance and parts replacement

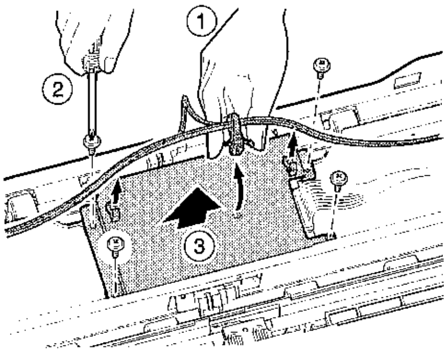
(Replacement parts)

No.	Unit	Parts		
a		1	CIS control PWB/CIS unit	○

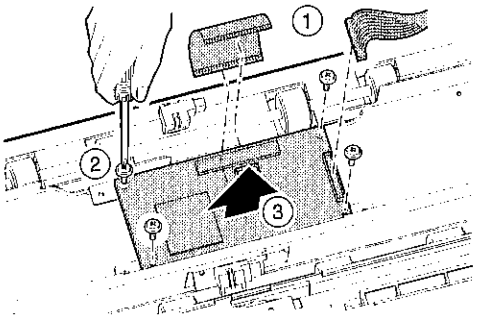


a-1. CIS control PWB/CIS unit

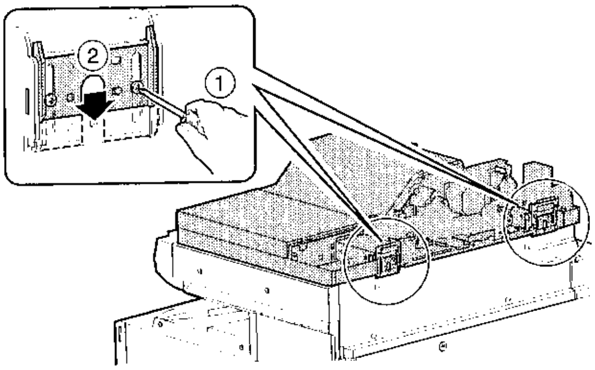
1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
2) Remove the document tray unit. (See "a. Document tray unit" in the previous section, "[Paper feed tray section]")
3) Remove the harness, then remove the PWB cover.



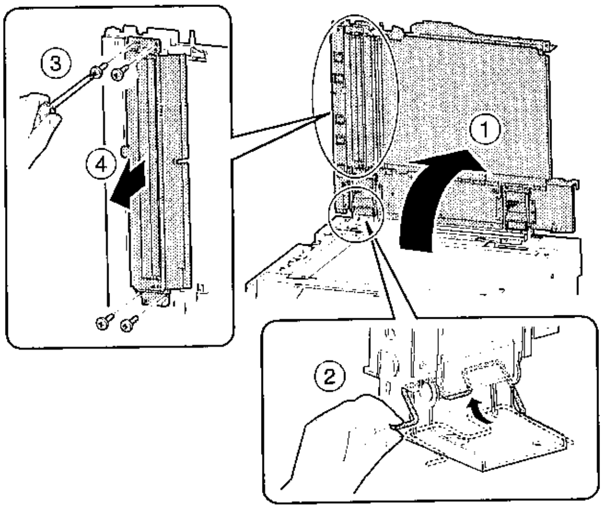
4) Remove each cable, and remove the PWB.



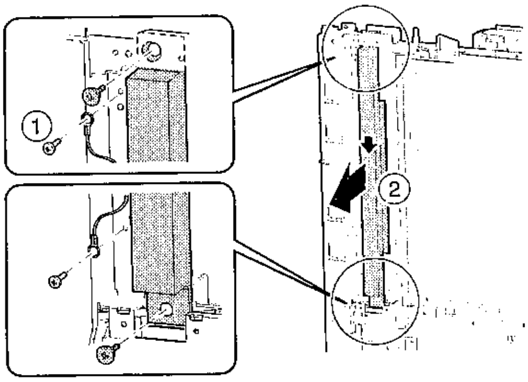
5) Loosen the hinge screws to lower the two fittings.



▲ 6) Open the SPF, attach the SPF drop preventing stopper, and remove the paper guide.



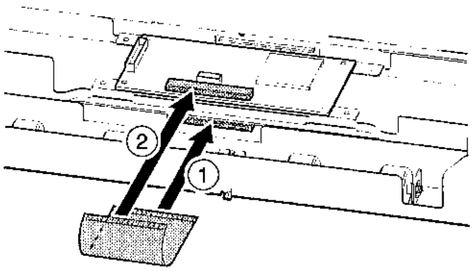
7) Remove the ground lead and CIS.

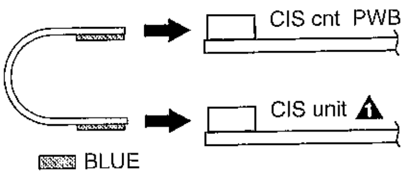


Caution when assembling

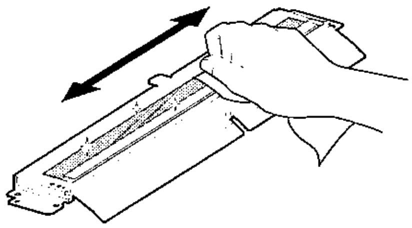
- When assembling the flat cable, first attach the lower side then the upper side.

▲





▲ • Clean the both surfaces of the paper guide glass.

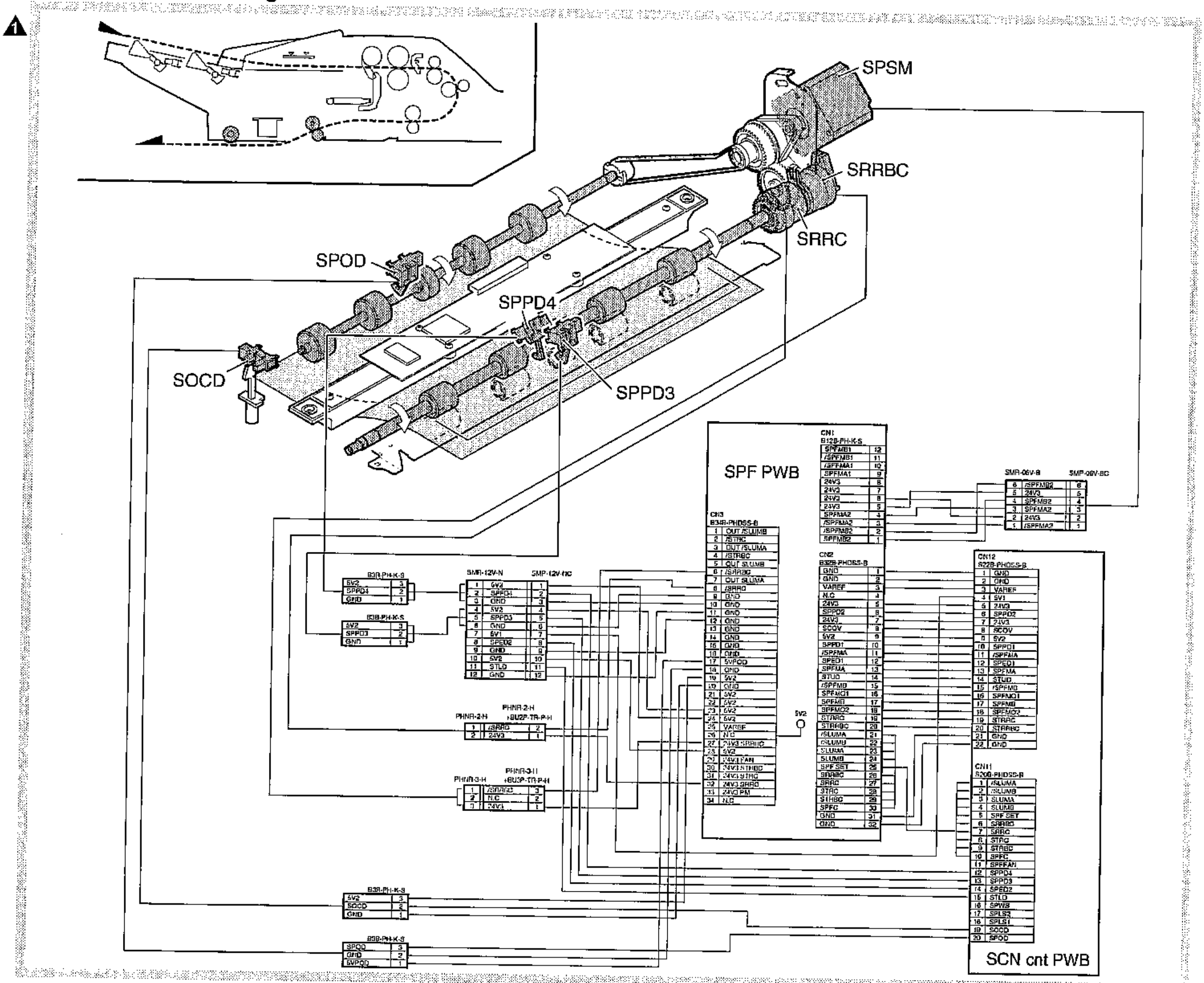


▲1 : Feb. 6 2004

[Paper exit section]

A. Major parts and signal functions

▲1



Code	Signal name	Name	Function/Operation	Type	Model	Note
SOCD	SOCD	SPF open/close detector	SPF unit open/close detection	Transmission type		Sensor
SPOD	SPOD	SPF paper exit detector	SPF paper exit detection	Transmission type		Sensor
SPPD3	SPPD3	SPF document paper pass detector 3	SPF document paper pass detection 3	Transmission type		Sensor
SPPD4	SPPD4	SPF document paper pass detector 4	SPF document paper pass detection 4	Transmission type		Sensor
SRRC	SRRC	SPF No. 2 resist clutch	SPF transport roller 3 ON/OFF control	Electromagnetic clutch		
SRRBC	SRRBC	SPF No. 2 resist roller brake clutch	SPF transport roller 3 braking	Electromagnetic clutch		
SPSM	LSPFH2	SPF paper exit motor	Drives the paper exit roller. (SPF)	Stepping motor		

B. Operational descriptions

(1) Document feed, transport, scan, paper exit, and operating speed

The document fed by the take-up roller is sent through the paper feed roller and the transport roller to the resist roller section.

In the resist roller section, the document lead edge and the scan start position are synchronized. The document is transported to the scan section. After being scanned, the document discharged to the document exit tray by the paper exit roller.

The document transport speed varies depending on the scan mode and the scan magnification ratio as shown below.

Scan mode	Magnification ratio	Document transport speed
Single surface scan	Up to 117%	360mm/sec
Single surface scan	118% or above	220mm/sec
Duplex scan	Up to 100%	220mm/sec
Duplex scan	101% or above	110mm/sec

⚠ : Feb. 6 2004

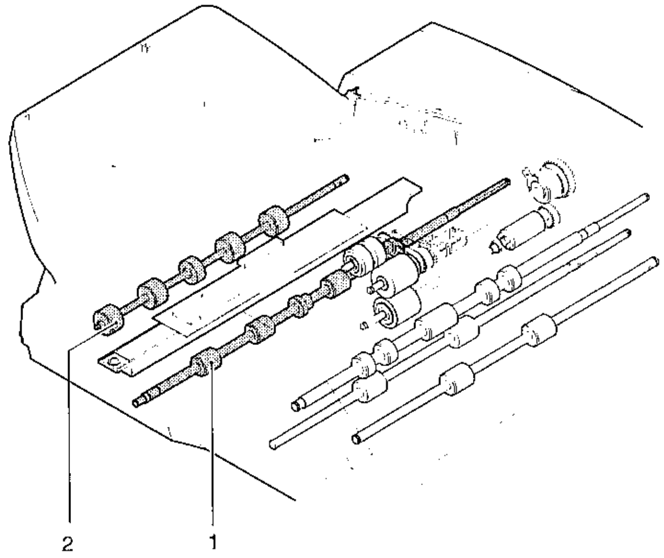
C. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ⊔: Shift position

⚠

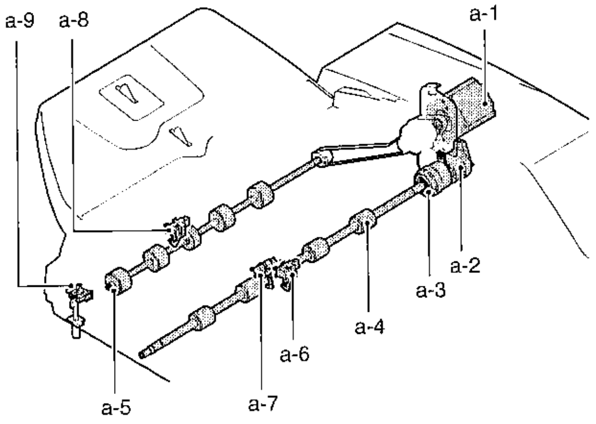
Unit name		No.	Part name	When calling	250K 300K	500K 600K	750K 900K	1000K 1200K	1250K 1500K	1500K 1800K	1750K 2100K	2000K 2400K	Remark
			AR-M550U/N (PM: 250K) AR-M620U/N, AR-M700U/N (PM: 300k)										
SPF section	Paper exit section	1	No. 2 resist roller	○	○	○	○	○	○	○	○	○	
		2	Paper exit roller	○	○	○	○	○	○	○	○	○	



(2) Maintenance and parts replacement

(Replacement parts)

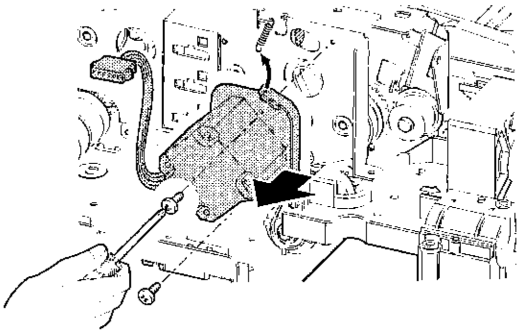
No.	Unit	Parts		
a		1	SPF paper exit motor	
		2	SPF paper transport roller 3 brake clutch	
		3	SPF paper transport roller 3 clutch	
		4	No. 2 resist roller (Drive)	○
		5	Paper exit roller (Drive)	○
		6	SPF document paper pass detector 3	
		7	SPF document paper pass detector 4	
		8	SPF paper exit detector	
		9	SPF open/close detector	



a-1. SPF paper exit motor

1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")

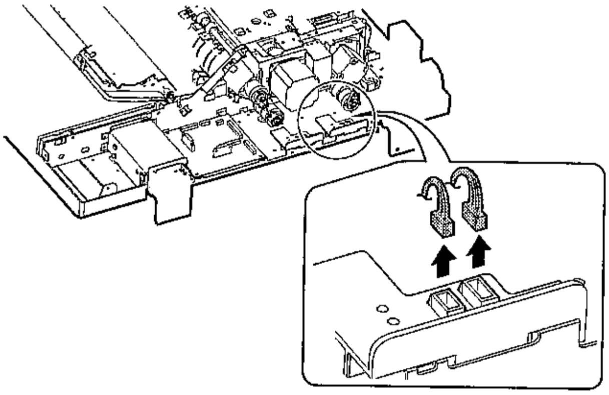
⚠ 2) Remove the tension SP and remove the SPF paper feed/paper transport motor.



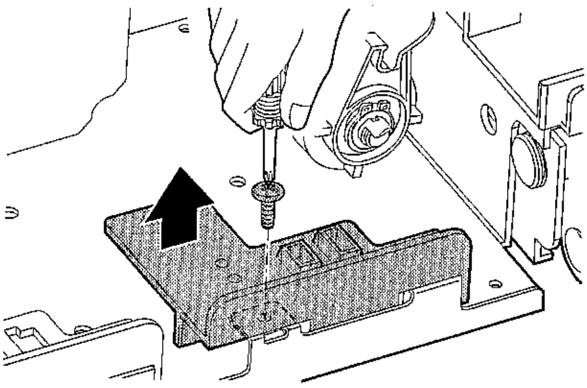
a-2. SPF paper transport roller 3 brake clutch

a-3. SPF paper transport roller 3 clutch

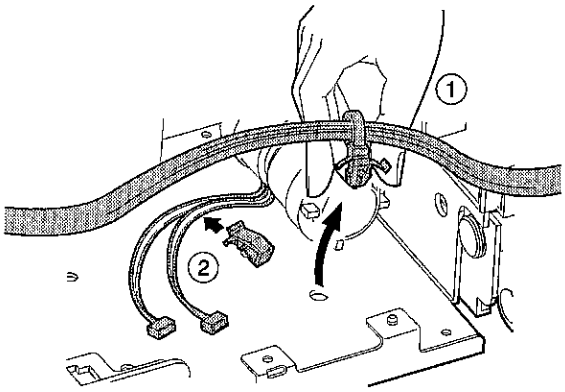
1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
2) Disconnect the connectors.



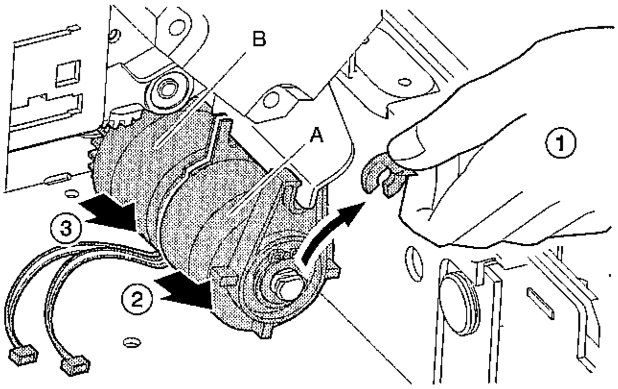
3) Remove the connector base.



4) Remove the super snap band to remove the cable.

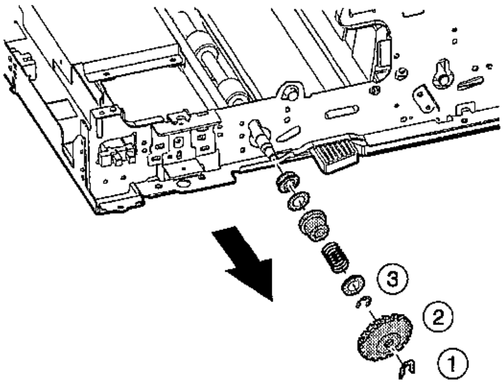


5) Remove the plastic E-ring, and remove the SPF paper transport roller 3 brake clutch (A), and the SPF paper transport roller 3 clutch (B).



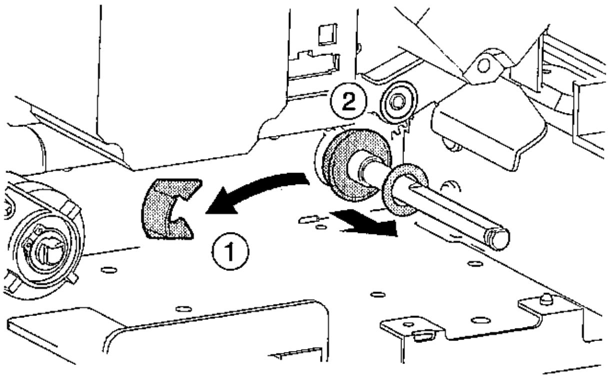
a-4. No. 2 resist roller (Drive)

1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
2) Remove the document tray unit. (See "a. Document tray unit" in the previous section, "[Paper feed tray section]")
3) Remove the plastic E-ring to remove the jam release knob.

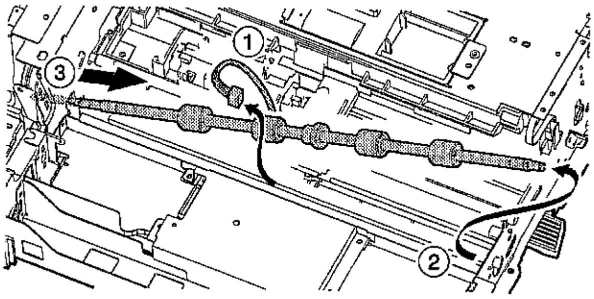


4) Remove the electromagnetic clutch. (See "a-2. SPF paper transport roller 3 brake clutch" in this section)

⚠ 5) Remove the rear side bearing to remove the plastic E-ring spacer.



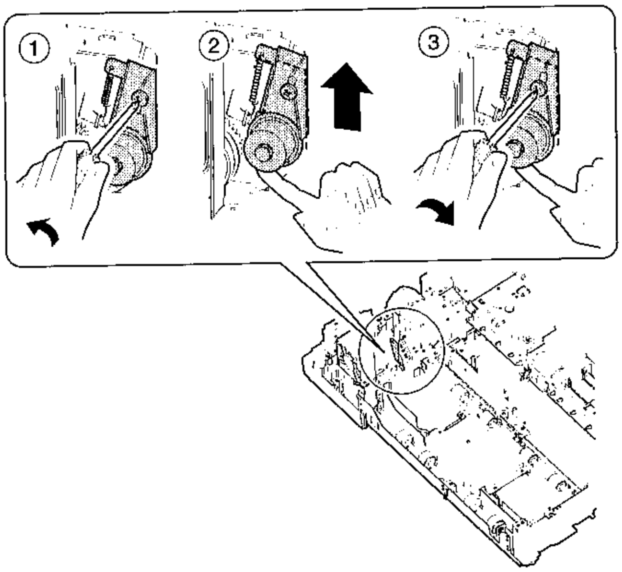
6) Disconnect the connector, and remove the No. 2 resist roller drive in the arrow direction.



▲ : Feb. 6 2004

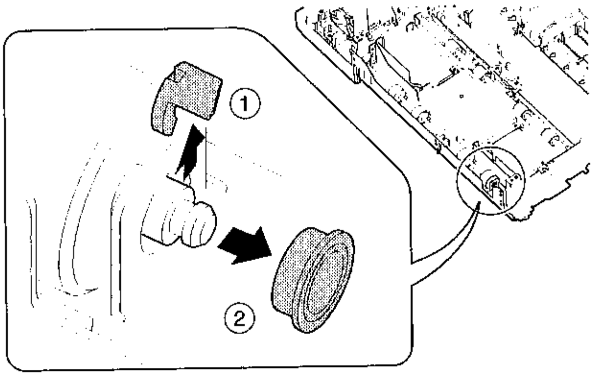
a-5. Paper exit roller (Drive)

1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
2) Remove the document tray unit. (See "a. Document tray unit" in the previous section, "[Paper feed tray section]")
3) Loosen the screw to raise up the belt tension roller; then fix it by tightening the screw again.

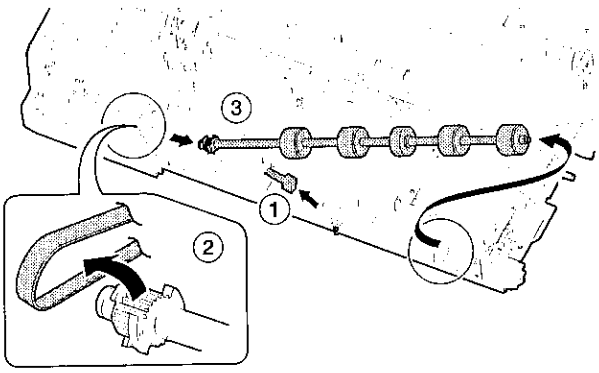


▲ NOTE: When fixing, apply a tension to the spring.

3) Remove the plastic E-ring to remove the bearing.



4) Disconnect the connector, and remove the paper exit roller drive in the arrow direction.



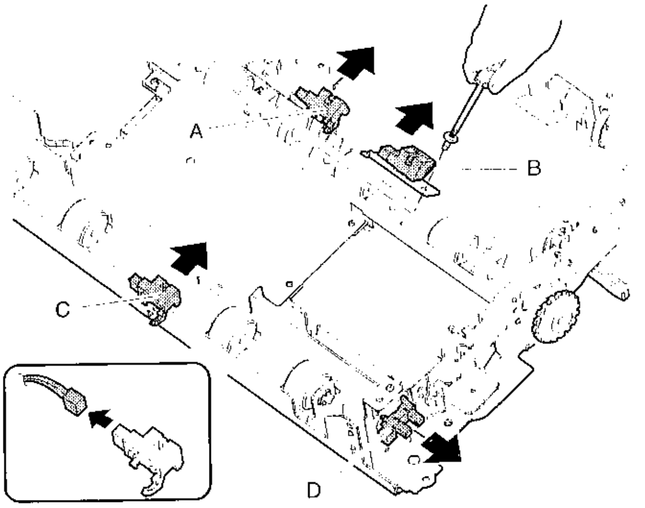
a-6. SPF document paper pass detector 3

a-7. SPF document paper pass detector 4

a-8. SPF paper exit detector

a-9. SPF open/close detector

1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
2) Remove the document tray unit. (See "a. Document tray unit" in the previous section, "[Paper feed tray section]")
3) Disconnect the connectors, and remove the SPF document paper pass detector 3 (A), the SPF document paper pass detector 4 (B), the SPF paper exit detector (C), and the SPF open/close detector (D).



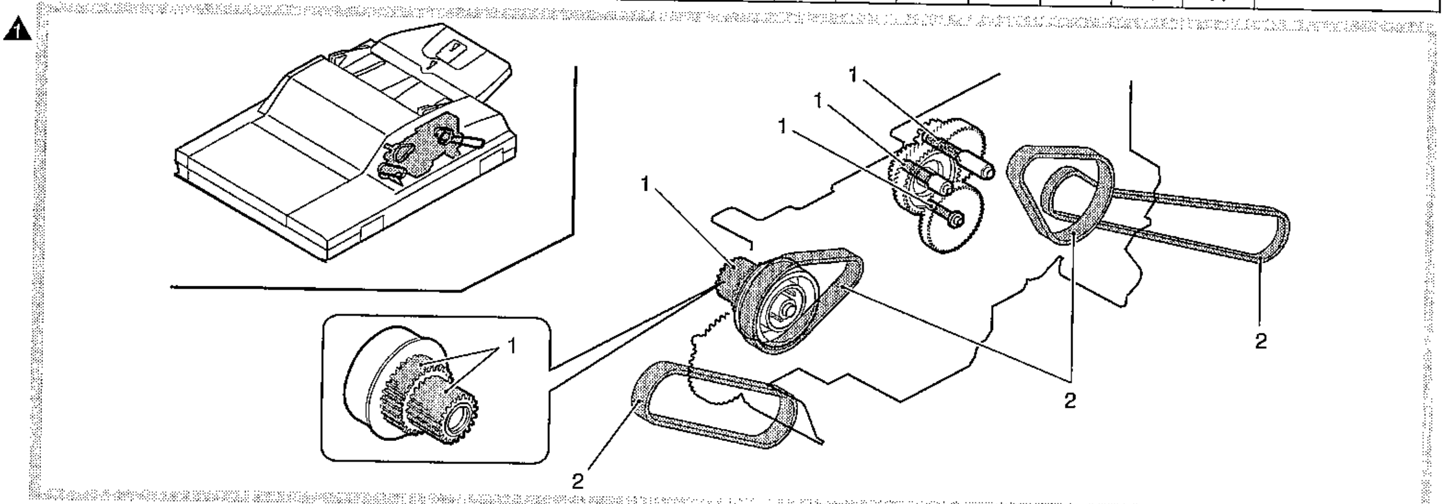
[Other]

A. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift position

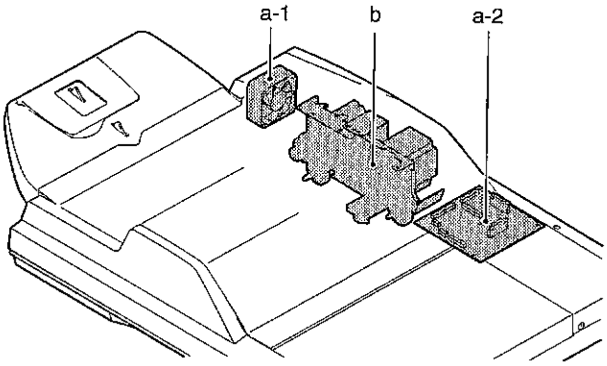
			AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
			AR-M620U/N, AR-M700U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name		No.	Part name										
SPF	Drive section	1	Gears (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0299FCZZ
		2	Belts		×	×	×	×	×	×	×	×	



(2) Maintenance and parts replacement

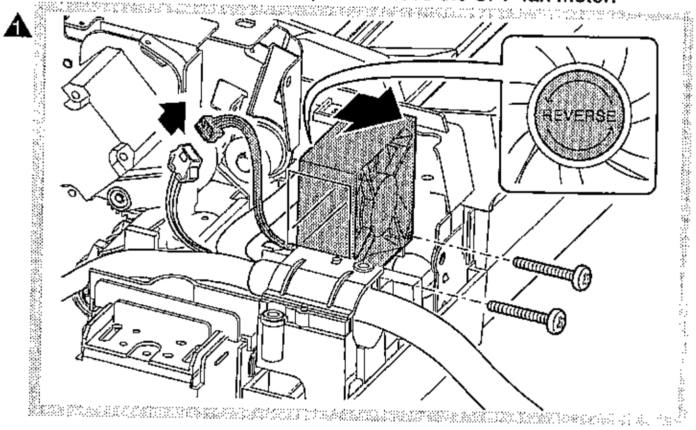
(Replacement parts)

No.	Unit	Parts	
a		1	SPF fan motor
		2	SPF PWB
b	Drive unit		



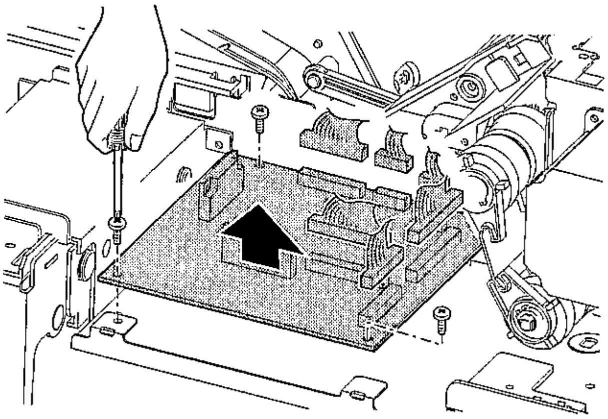
a-1. SPF fan motor

1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
2) Disconnect the connector, and remove the SPF fan motor.



a-2. SPF PWB

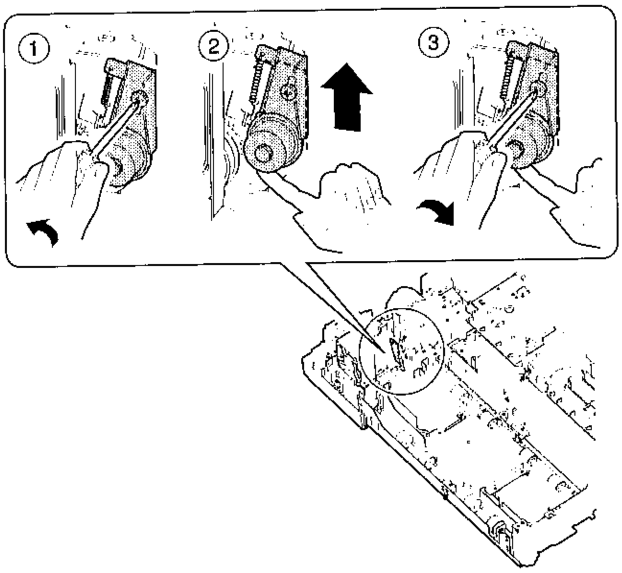
1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
2) Disconnect the connector, and remove the SPF PWB.



⚠ : Feb. 6 2004

b. Drive unit

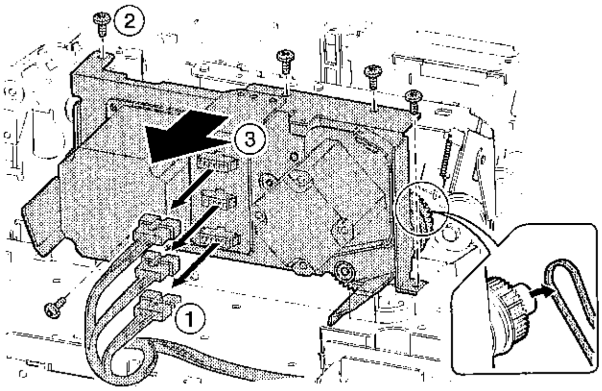
1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
2) Remove the electromagnetic clutch.
3) ⚠ Loosen the screw to raise up the belt tension roller; then fix it by tightening the screw again.



NOTE: When fixing, apply a tension to the spring.

4) Remove the drive unit.

⚠



▲: Feb. 6 2004

8. Drive section

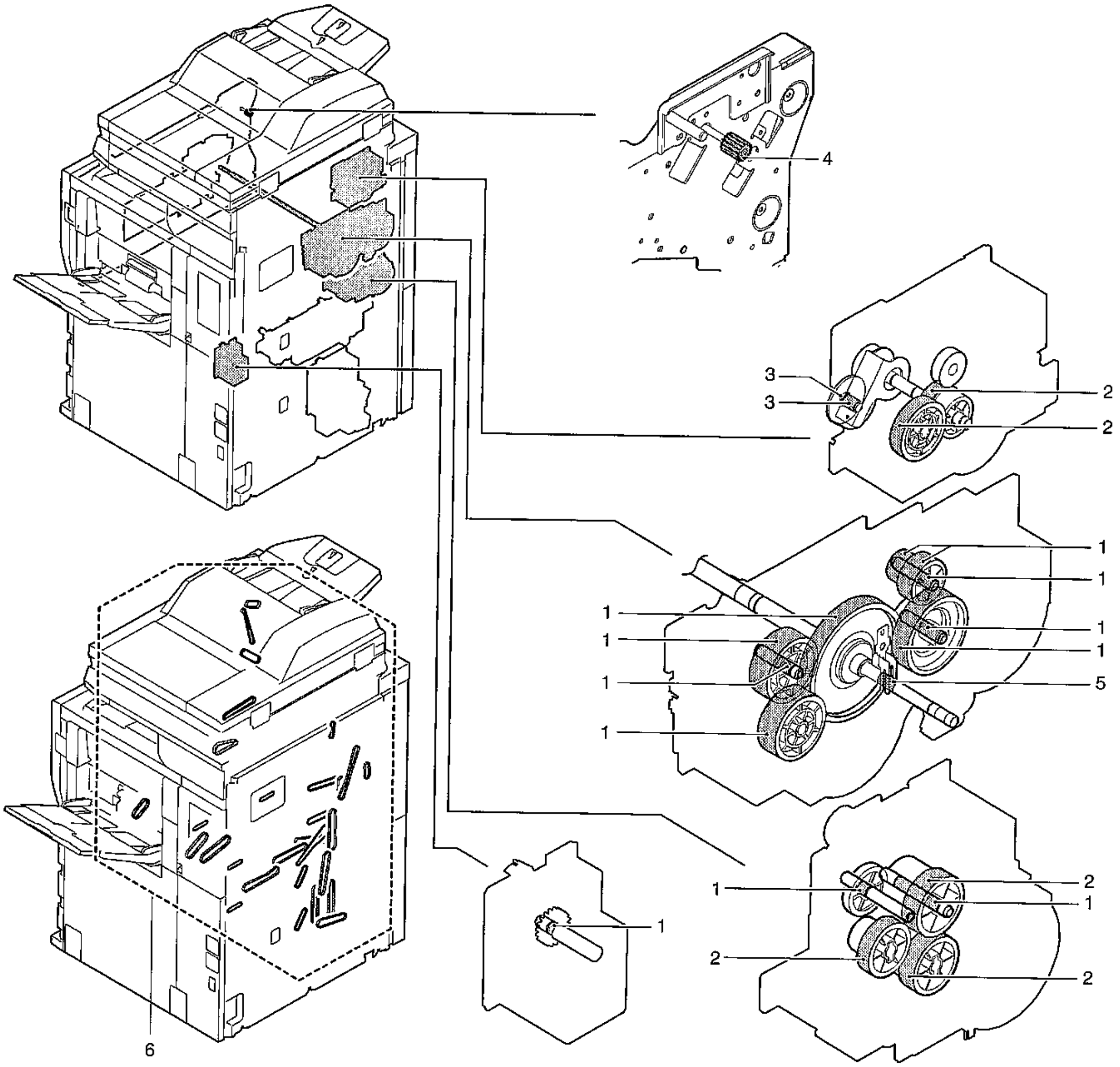
A. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

▲

		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N, AR-M700U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Drive section	1	Gear (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0307FCZZ
	2	Gear (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0299FCZZ
	3	Gear (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0062FCZZ
	4	Gear (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0235FCZZ
	5	Gear (Conductive grease)	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ
	6	Belts		×	×	×	×	×	×	×	×	



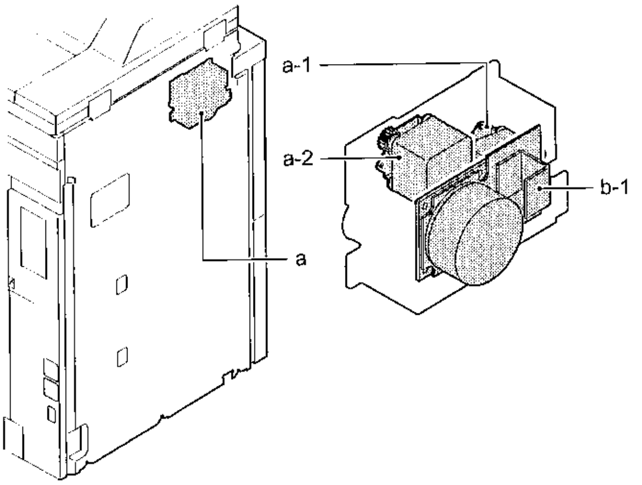
▲ : Feb. 6 2004

(2) Maintenance and parts replacement

[Fusing drive section]

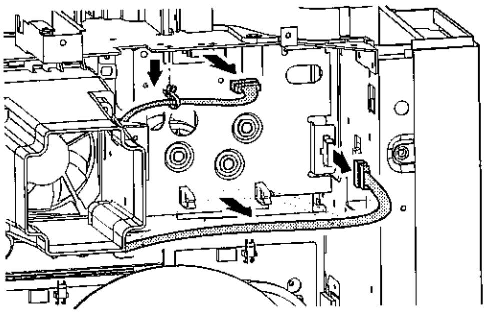
(Replacement parts)

No.	Unit	Parts	
a	Fusing drive unit	1	Paper exit motor 1
		2	Paper exit motor 2
b		1	Fusing motor



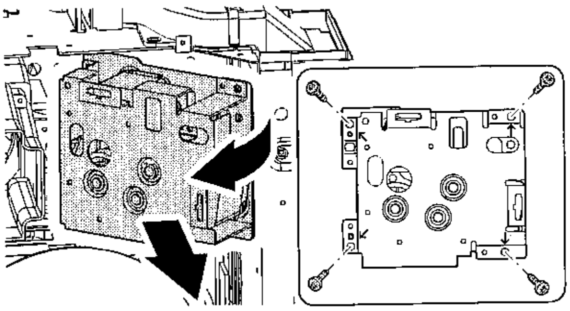
a. Fusing drive unit

1) Remove the fusing unit. (See "a. Fusing unit" in the "6. Fusing section")
2) Remove the fusing motor. (See "b-1. Fusing motor" in this section)
3) Disconnect the connector and remove the harnesse clamp.



4) Remove the fusing drive unit.

▲



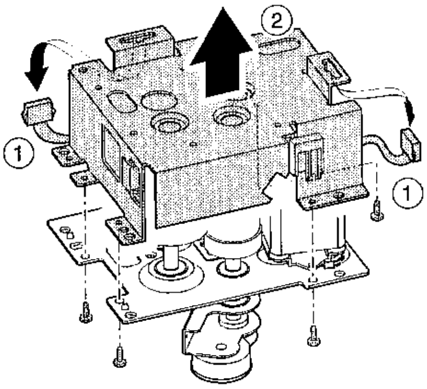
※ Remove the screw which was indicated with the arrow mark.

a-1. Paper exit motor 1

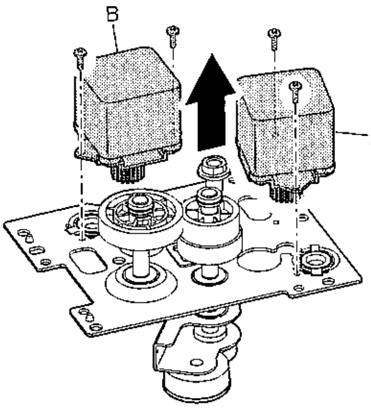
a-2. Paper exit motor 2

1) Remove the fusing unit. (See "a. Fusing unit" in the "6. Fusing section")
2) Remove the fusing drive unit. (See "b-1. Fusing motor" in this section)
3) Disconnect the connector, and remove the fusing drive frame.

▲



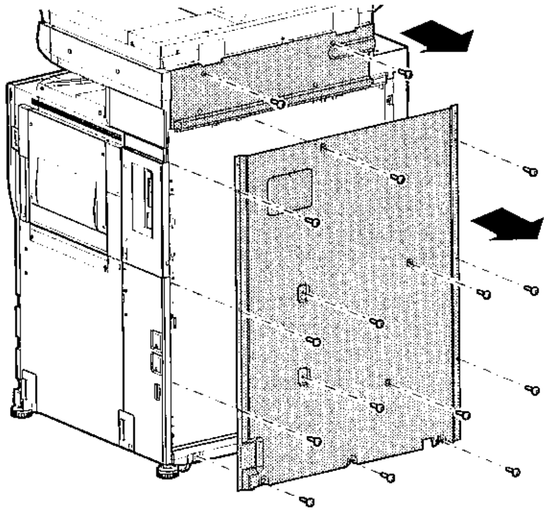
4) Remove the paper exit motor 1 (A) and the paper exit motor 2 (B).



b-1. Fusing motor

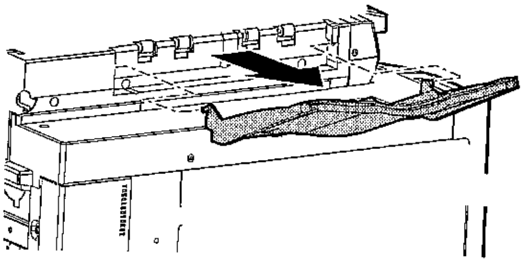
1) Remove the rear cabinet and the rear cabinet upper.

▲



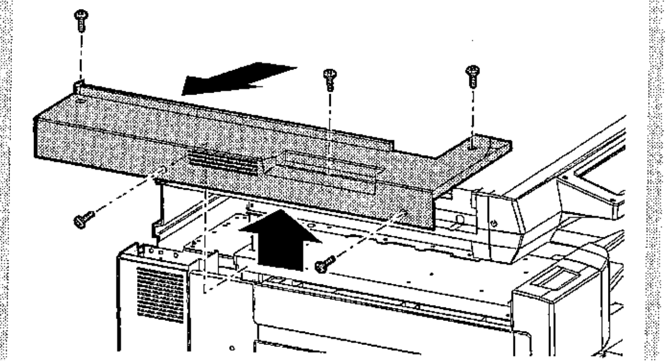
△1 : Feb. 6 2004

2) Remove the tray.

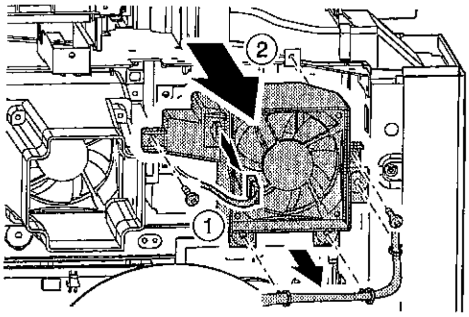


3) Remove the left cover cabinet.

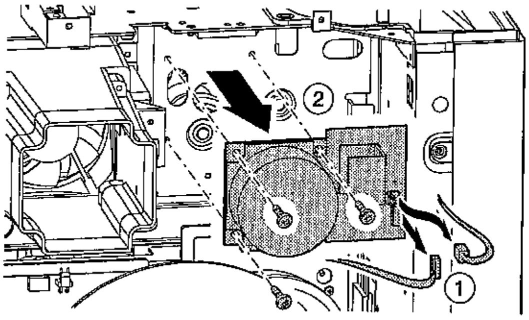
△1



4) Disconnect the connector and remove the harness clamp, and remove the paper exit tray duct R unit.



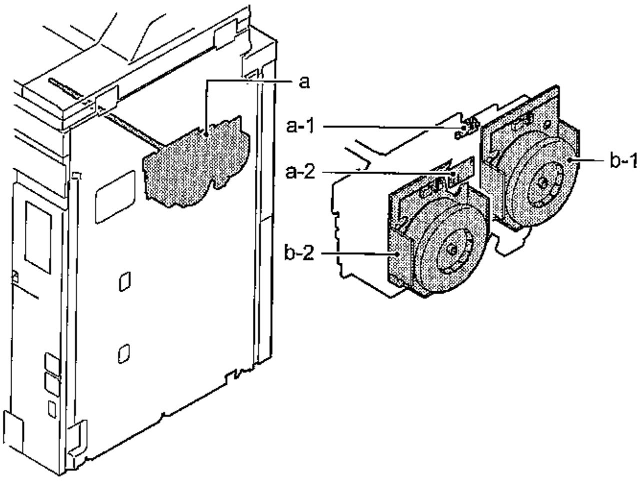
5) Disconnect the connector and remove the fusing motor.



[Drum drive section]

(Replacement parts)

No.	Unit		Parts
a	Drum drive unit	1	Waste toner pipe lock detector
		2	Process humidity sensor
b	Other	1	OPC drum motor
		2	Developing motor

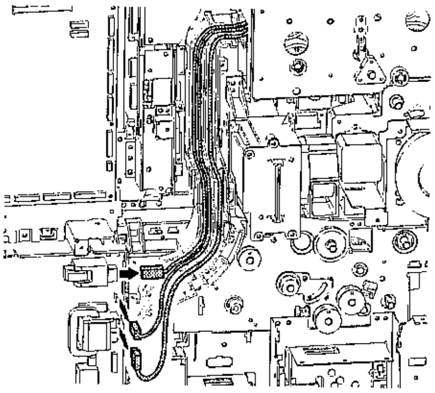


a. Drum drive unit

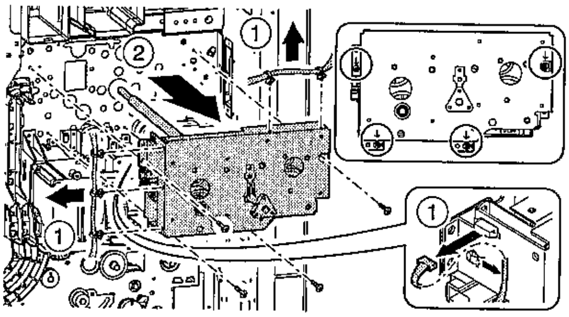
1) Remove the developing unit and the process unit. (See "a. Developing unit"/4. Image process section "[OPC drum section]" and "a. Process unit")

2) Remove the OPC drum motor and the developing motor. (See "b-1. OPC drum motor" in this section)

3) Disconnect the connector, and remove the harness from the harness holder.



4) Disconnect the connector and remove the harness clamp, and remove the drum drive unit.

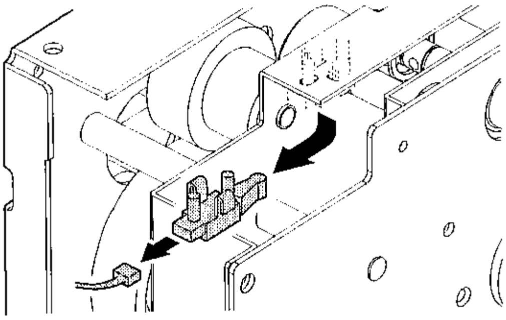


※ Remove the screw which was indicated with the arrow mark.

⚠: Feb. 6 2004

a-1. Waste toner pipe lock detector

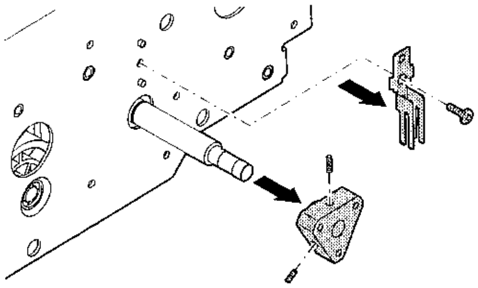
1) Remove the developing unit and the process unit.
2) Remove the OPC drum motor and the developing motor. (See "b-1. OPC drum motor" and "b-2. Developing motor" in this section)
3) Remove the drum drive unit. (See "a. Drum drive unit" in this section)
4) Disconnect the connector, and remove the waste toner pipe lock detector.



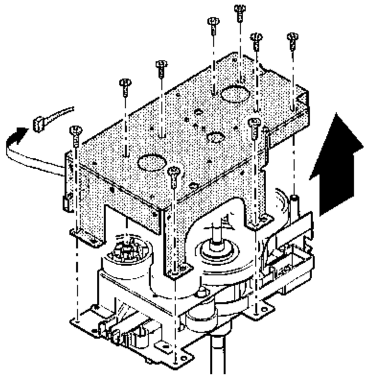
a-2. Process humidity sensor

1) Remove the developing unit. (See "a. Developing unit" in the "[Developer tank section]")
2) Remove the process unit. (See "a. Process unit" in the "[OPC drum section]")
3) Remove the OPC drum motor and the developing motor. (See "b-1. OPC drum motor" in this section)
4) Remove the drum drive unit. (See "a. Drum drive unit" in this section)
5) Remove the drum earth plate. Remove the set screw and the flywheel joint. Remove the E-ring.

⚠

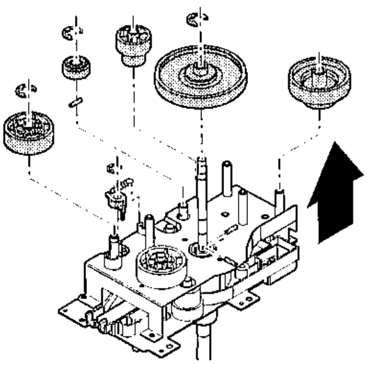


6) Disconnect the connector, and remove the drum drive frame.

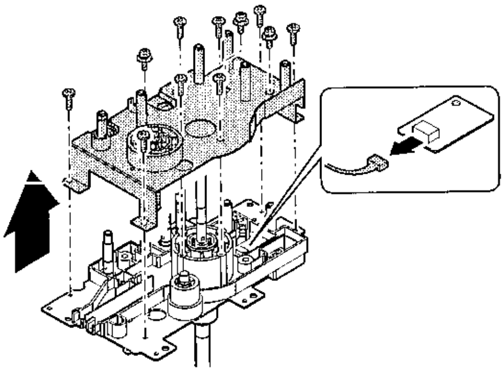


7) Remove the parts.

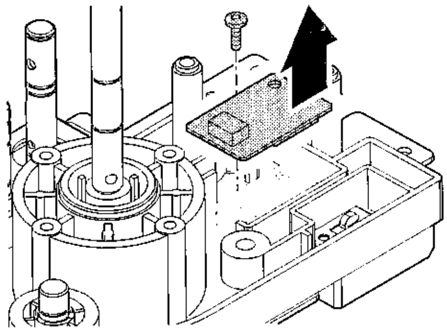
⚠



8) Disconnect the connector, and remove the sensor plate.



9) Remove the process humidity sensor.

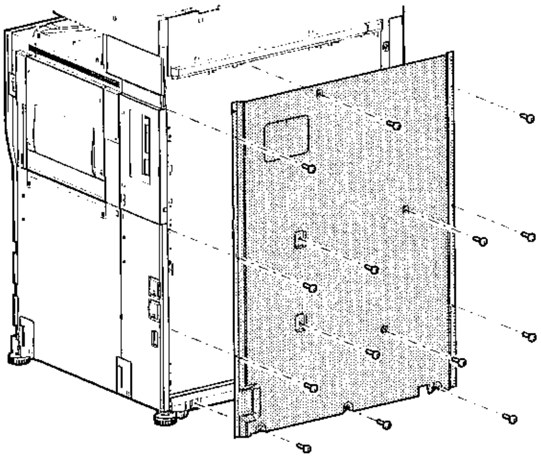


b-1. OPC drum motor

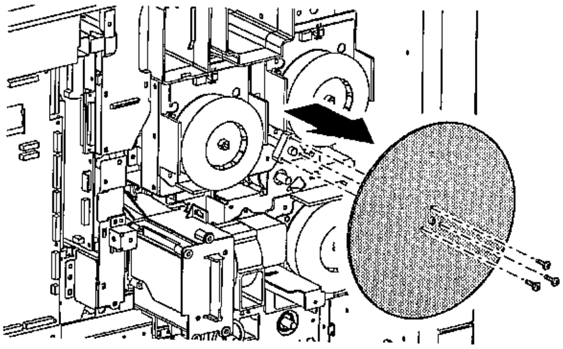
b-2. Developing motor

1) Remove the rear cabinet.

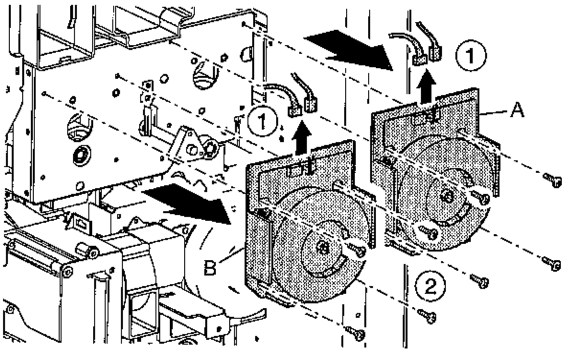
⚠



2) Remove the flywheel.



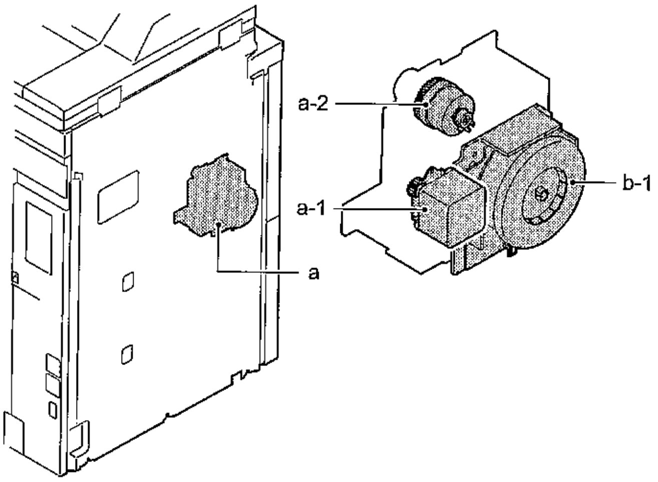
3) Disconnect the connector, and remove the OPC drum motor (A) and the developing motor (B).



[Paper feed/paper transport drive section]

(Replacement parts)

No.	Unit	Parts	
a	Main drive unit	1	Resist roller front drive motor
		2	Resist roller clutch
b	Other	1	Main motor



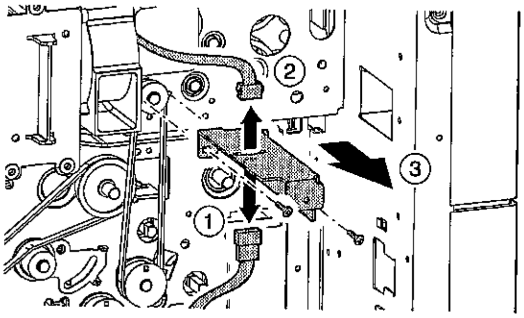
a. Main drive unit

1) Remove the resist roller unit. (See "2. Paper feed, paper transport, duplex, and paper exit reverse sections" "(Vertical paper transport section 2)", "a. Resist roller unit")

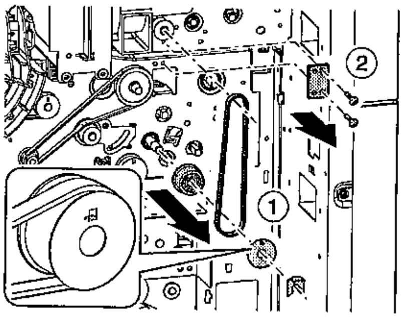
2) Remove the flywheel. (See "b-1. OPC drum motor" in this section (a. Drum drive unit))

3) Remove the main motor. (See "a-1. Main motor" in this section)

4) Disconnect the connector, and remove the eternal outfit mounting plate.

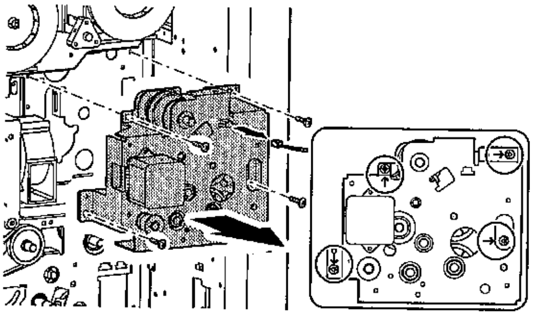


5) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley. Remove the joint plate.



* When installing, be careful of the direction of the belt holding sheet.

6) Disconnect the connector, and remove the main drive unit.

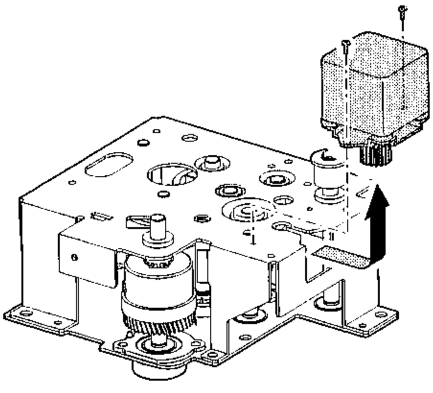


* Remove the screw which was indicated with the arrow mark.

⚠ : Feb. 6 2004

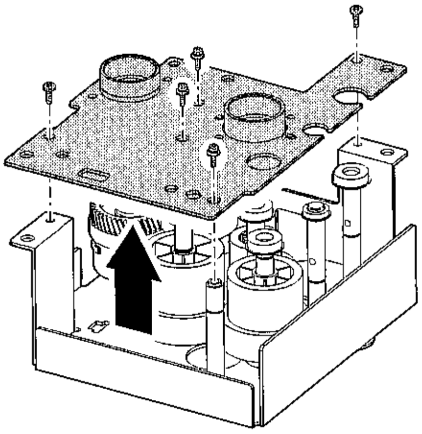
a-1. Resist roller front drive motor

1) Remove the resist roller unit. (See "2. Paper feed, paper transport, duplex, and paper exit reverse sections" "(Vertical paper transport section 2)", "a. Resist roller unit")
2) Remove the flywheel. (See "b-1. OPC drum motor" in this section)
3) Remove the main motor. (See "a-1. Main motor" in this section)
4) Remove the main drive unit. (See "a-1. Main motor" in this section)
5) Remove the resist roller front drive motor.

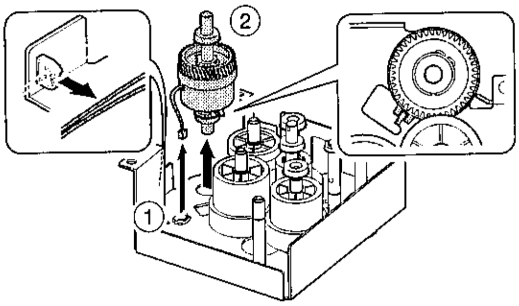


a-2. Resist roller clutch

1) Remove the resist roller unit. (See "2. Paper feed, paper transport, duplex, and paper exit reverse sections" "(Vertical paper transport section 2)", "a. Resist roller unit")
2) Remove the flywheel. ((See "b-1. OPC drum motor" in this section (a. Drum drive unit))
3) Remove the main motor. (See "a-1. Main motor" in this section)
4) Remove the main drive unit. (See "a-1. Main motor" in this section)
5) Disconnect the connector, and remove the main drive frame.

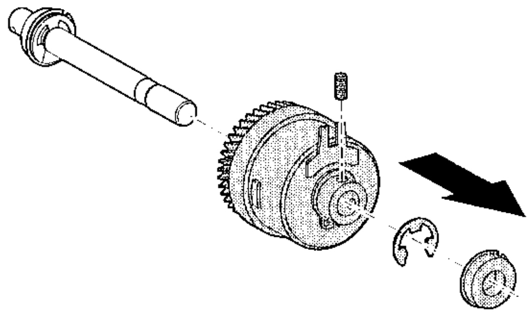


6) Disconnect the connector, and remove the resist roller clutch unit.



※ When installing, be sure to ensure that the projection of the plate is engaged in the clutch rotation stopper.

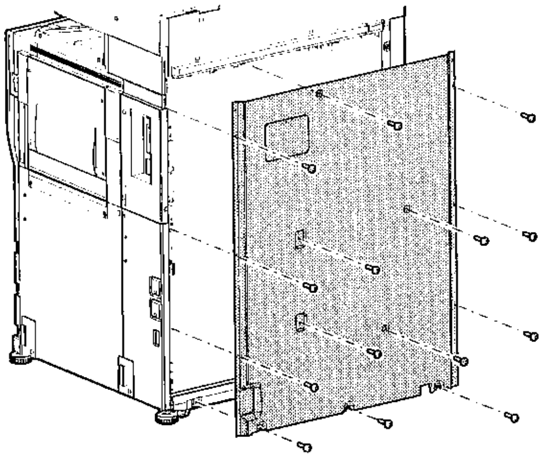
7) Remove the bearing, the E-ring, and the set screw, and remove the resist roller clutch.



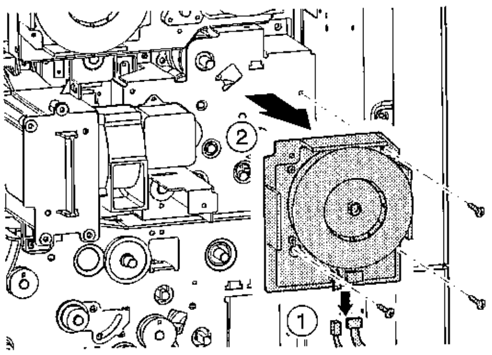
a-1. Main motor

1) Remove the rear cabinet.

⚠



2) Disconnect the connector, and remove the main motor.

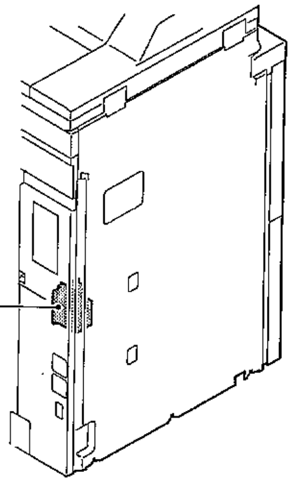


⚠: Feb. 6 2004

[Manual paper feed drive section]

(Replacement parts)

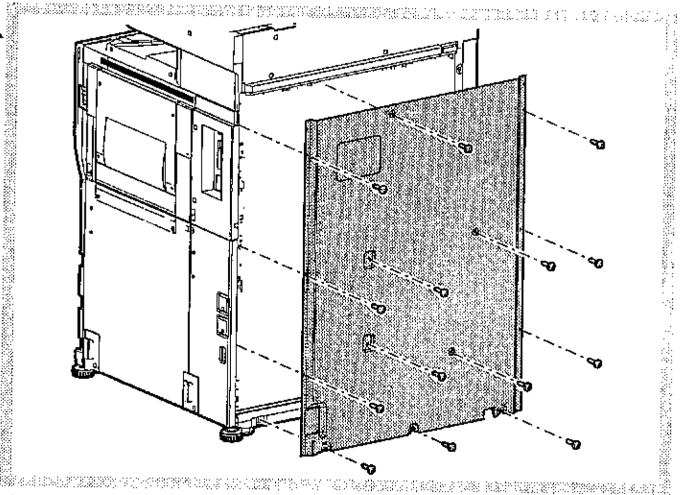
No.	Unit	Parts
a	Manual paper feed drive unit	



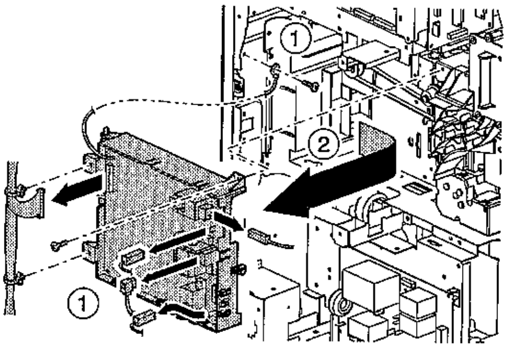
a. Manual paper feed drive unit

1) Remove the rear cabinet.

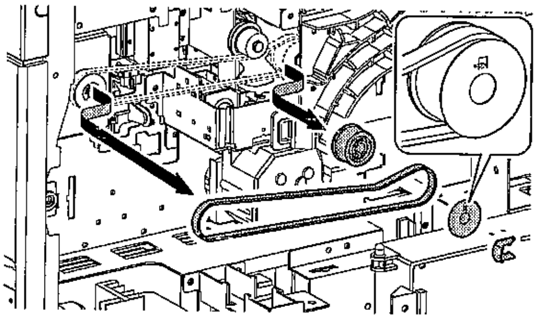
⚠



2) Disconnect the connector, the harness clamp, and the earth wire. Remove the high voltage PWB unit.

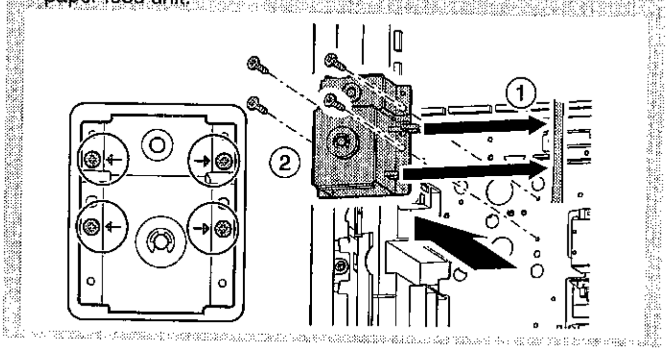


3) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley.



* When installing, be careful of the direction of the belt holding sheet.

⚠ 4) Remove the harness from the clamp, and remove the manual paper feed unit.

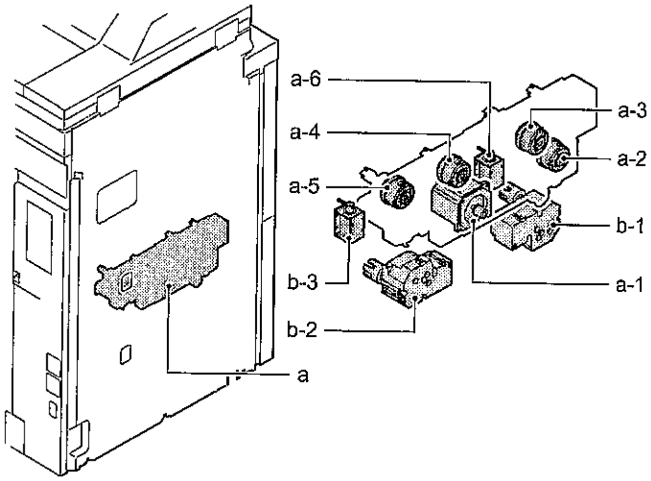


* Remove the screw which was indicated with the arrow mark.

[1/2 paper feed drive section]

(Replacement parts)

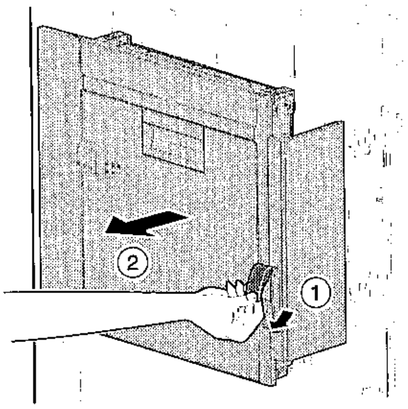
No.	Unit	Parts	
a	1/2 paper feed drive unit	1	Vertical paper transport motor
		2	Paper feed tray 3/4 paper transport clutch 2
		3	Paper feed clutch (Paper feed tray 1)
		4	Horizontal paper transport clutch
		5	Paper feed clutch (Paper feed tray 2)
		6	Paper pickup solenoid (Paper feed tray 1)
b	Other	1	Remove the paper tray lift-up motor (paper feed tray 1)
		2	Paper tray lift-up motor (Paper feed tray 2)
		3	Paper pickup solenoid (Paper feed tray 2)



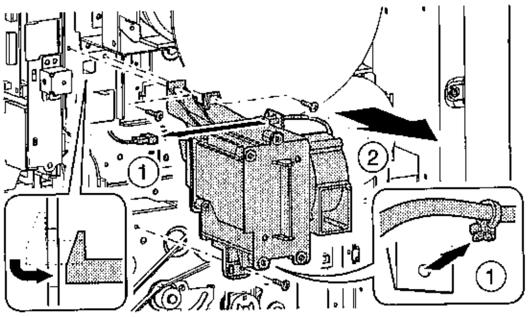
⚠ : Feb. 6 2004

a. 1/2 paper feed drive unit

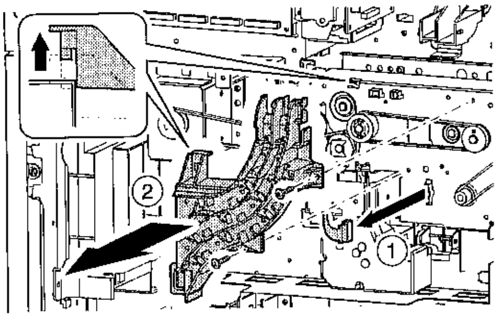
1) Remove the main motor. (See "a-1. Main motor" in the "[Paper feed/paper transport drive section]")
2) Remove the high voltage PWB unit. (See "a. Manual paper feed drive unit" in the "[Manual paper feed drive section]")
3) Pull out the left door.



4) Disconnect the connector and remove the harness clamp. Remove the DV fan unit.

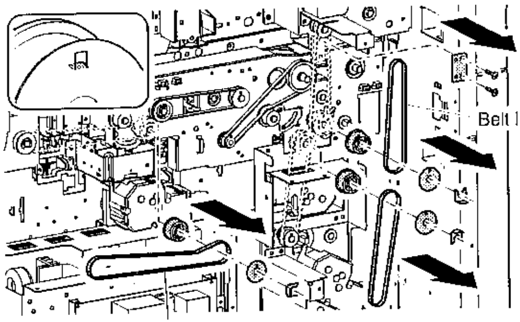


5) Disconnect the connector and remove the harness holder.



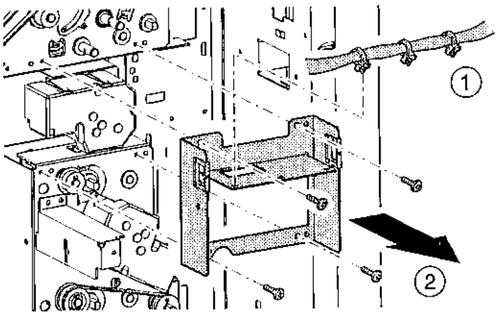
6) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley. Remove the joint plate.

⚠



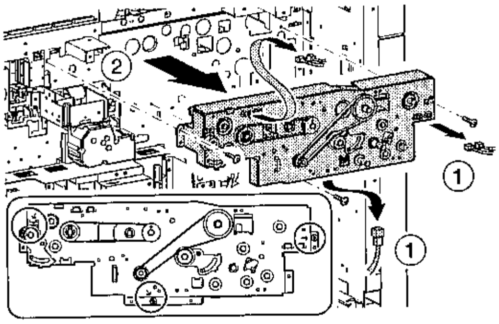
* When installing, be careful of the belt length and the belt holding sheet direction.

7) Remove the harness, and remove the drive joint plate.



* When installing, temporarily fix the 1/2 paper feed drive unit to the main unit, and install the drive joint plate. Then tighten the screw of the drive unit securely.

8) Disconnect the connector and remove the harness clamp. Remove the 1/2 paper feed drive unit.

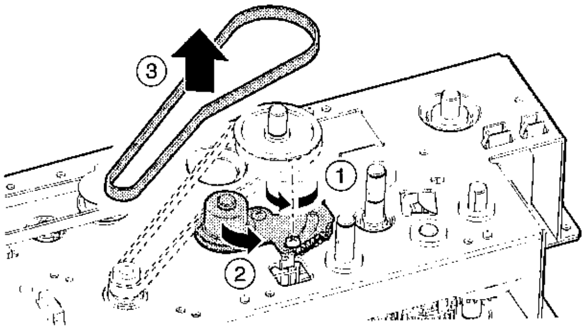


⚠ * If the left door is completely pulled out, the unit may drop off. Be careful to avoid it.

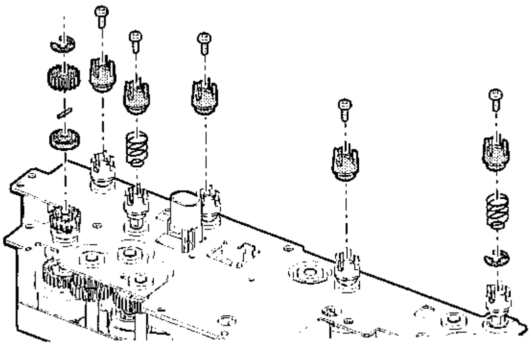
* Remove the screw which was indicated with the arrow mark.

a-1. Vertical paper transport motor

1) Remove the 1/2 paper feed drive unit. (See "a. 1/2 paper feed drive unit" in this section)
2) Loosen the screw to release the tension, and remove the belt.

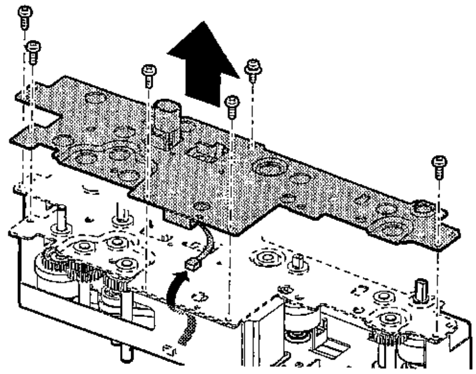


3) Remove the parts.

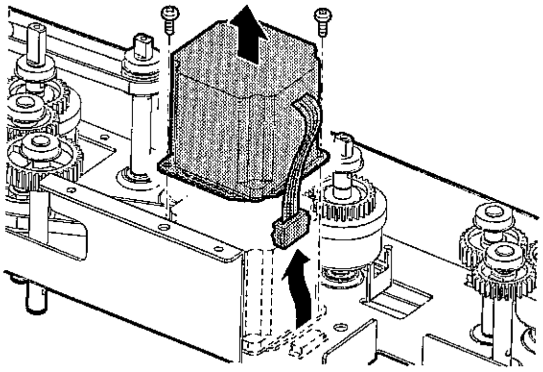


⚠ * Attach the spring to the longer shaft.

4) Remove the 1/2 paper feed drive frame lower. Remove the harness clamp.

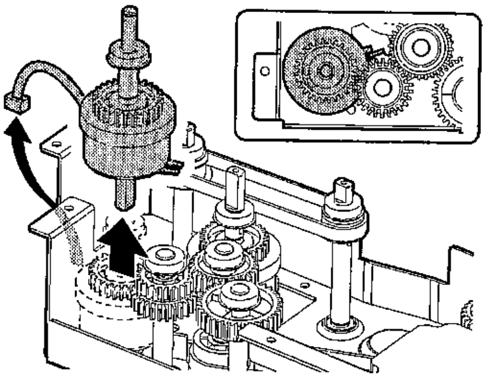


5) Disconnect the connector, and remove the vertical paper transport motor.

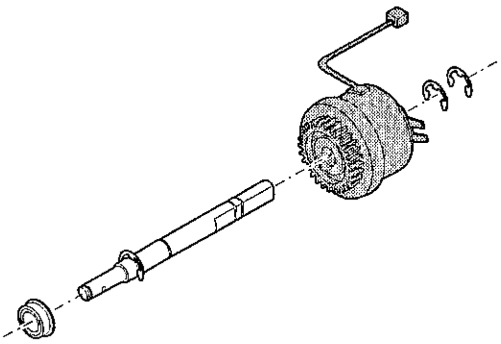


⚠ a-2. Paper feed tray 3/4 paper transport clutch 2

1) Remove the 1/2 paper feed drive unit. (See "a. 1/2 paper feed drive unit" in this section)
2) Remove the 1/2 paper feed drive frame lower. (See "a-1. Vertical paper transport motor" in this section)
3) Disconnect the connector and remove the harness clamp, and remove the paper feed tray 3/4 paper transport clutch 2.

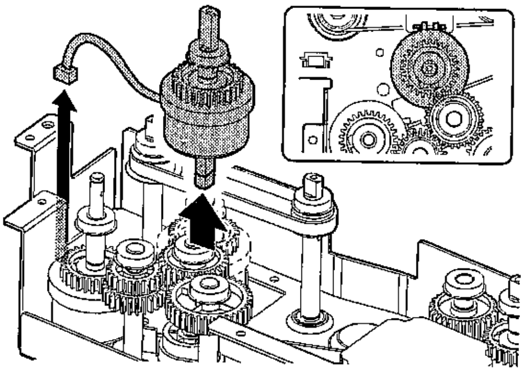


4) Remove the E-ring, and remove the paper feed tray 3/4 paper transport clutch 2.

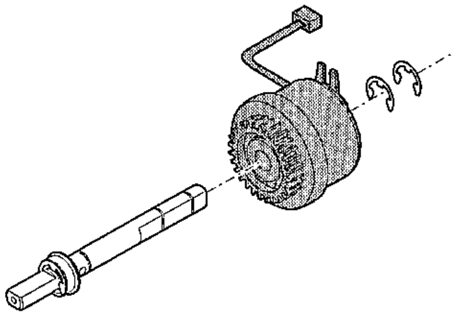


⚠ a-3. Paper feed clutch (Paper feed tray 1)

1) Remove the 1/2 paper feed drive unit. (See "a. 1/2 paper feed drive unit" in this section)
2) Remove the 1/2 paper feed drive frame lower. (See "a-1. Vertical paper transport motor" in this section)
3) Disconnect the connector and remove the harness clamp, and remove the paper feed clutch (paper feed tray 1) unit.

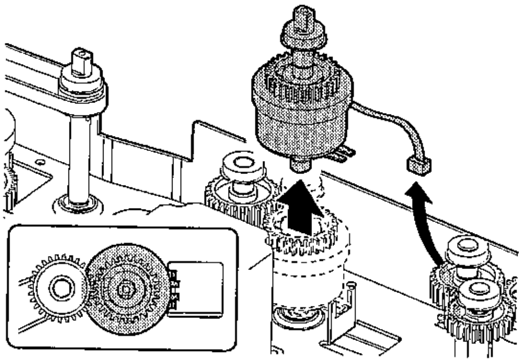


4) Remove the E-ring, and remove the paper feed clutch (paper feed tray 1).

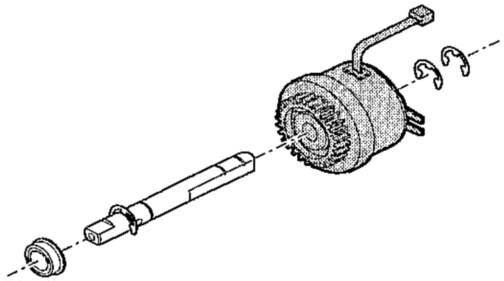


a-4. Horizontal paper transport clutch

1) Remove the 1/2 paper feed drive unit. (See "a. 1/2 paper feed drive unit" in this section)
2) Remove the 1/2 paper feed drive frame lower. (See "a-1. Vertical paper transport motor" in this section)
3) Disconnect the connector and remove the harness clamp, and remove the horizontal paper transport clutch.

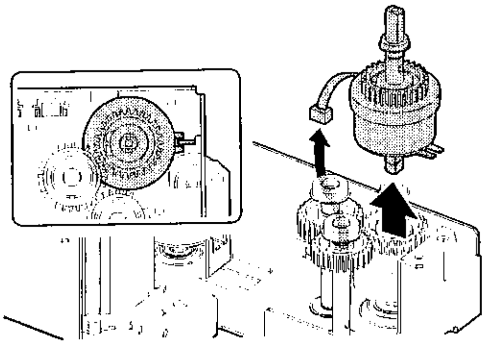


4) Remove the E-ring, and remove the horizontal paper transport clutch.

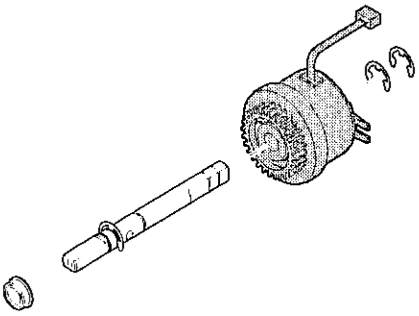


a-5. Paper feed clutch (Paper feed tray 2)

1) Remove the 1/2 paper feed drive unit. (See "a. 1/2 paper feed drive unit" in this section)
2) Remove the 1/2 paper feed drive frame lower. (See "a-1. Vertical paper transport motor" in this section)
3) Disconnect the connector and remove the harness clamp, and remove the paper feed clutch (paper feed tray 2).

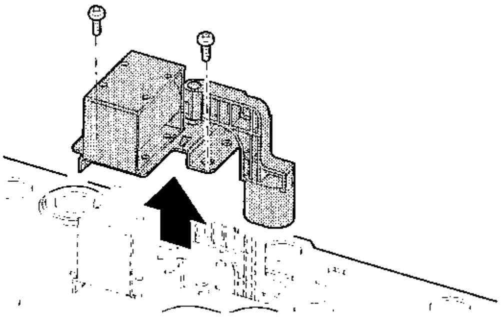


4) Remove the E-ring, and remove the paper feed clutch (paper feed tray 2).

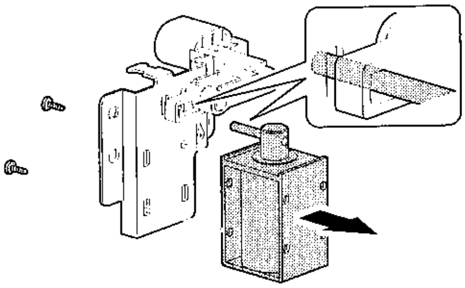


a-6. Paper pickup solenoid (Paper feed tray 2)

1) Remove the 1/2 paper feed drive unit. (See "a. 1/2 paper feed drive unit" in this section)
2) Remove the 1/2 paper feed drive frame lower. (See "a-1. Vertical paper transport motor" in this section)
3) Remove the paper pickup solenoid unit.



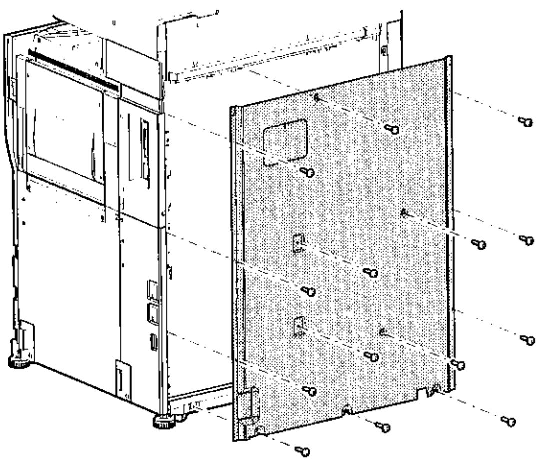
4) Remove the paper pickup solenoid.



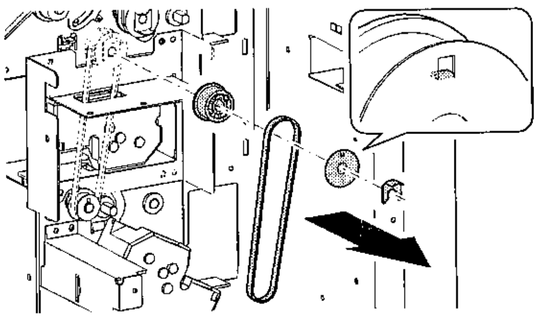
※ When installing, check that the solenoid plunger is inserted in the arm.

b-1. Remove the paper tray lift-up motor (paper feed tray 1)

1) Remove the rear cabinet.

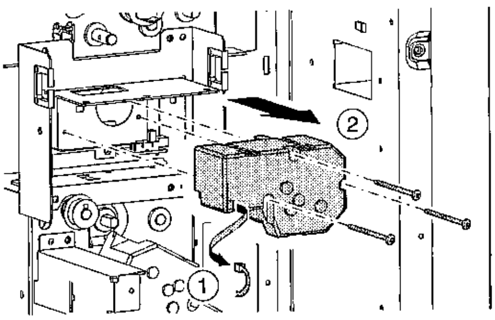


2) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley.

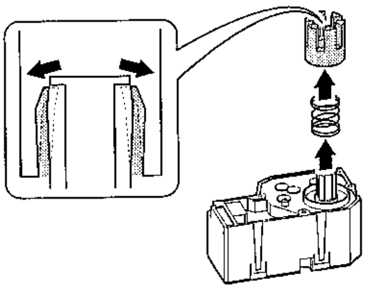


※ When installing, be careful of the direction of the belt holding sheet.

3) Disconnect the connector, and remove the lift-up motor unit.

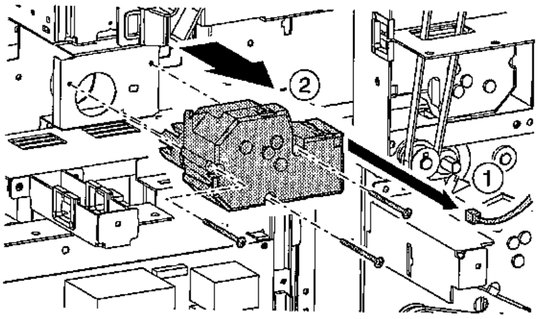


4) Release the pawl, and remove the lift-up coupling. Remove the lift-up spring from the paper tray lift-up motor.

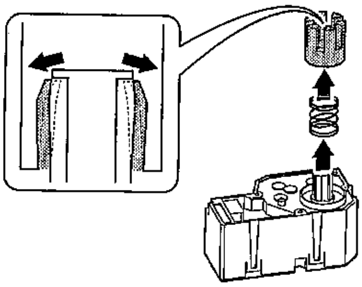


b-2. Paper tray lift-up motor (Paper feed tray 2)

1) Remove the high voltage PWB unit. (See "a. Manual paper feed drive unit" in the "[Manual paper feed drive section]")
2) Disconnect the connector, and remove the lift-up motor unit.

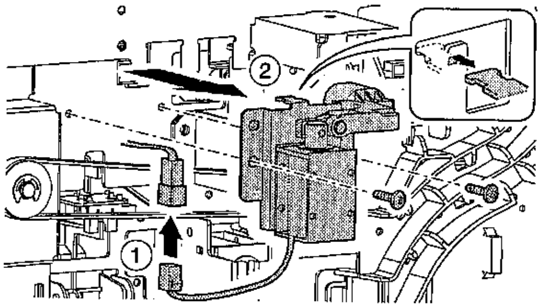


3) Release the pawl, and remove the lift-up coupling. Remove the lift-up spring from the lift-up motor.

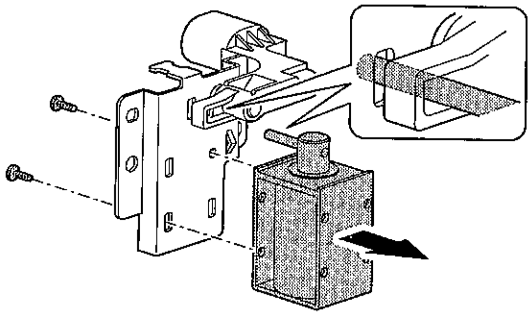


b-3. Paper pickup solenoid (Paper feed tray 2)

1) Remove the high voltage PWB unit. (See "a. Manual paper feed drive unit" in the "[Manual paper feed drive section]")
2) Disconnect the connector, and remove the paper pickup solenoid unit.



3) Remove the paper pickup solenoid.

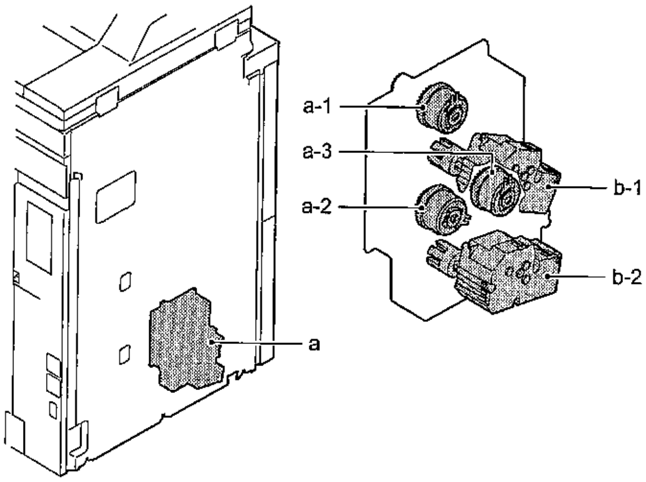


* When installing, check that the solenoid plunger is inserted in the arm.

[3/4 paper feed drive section]

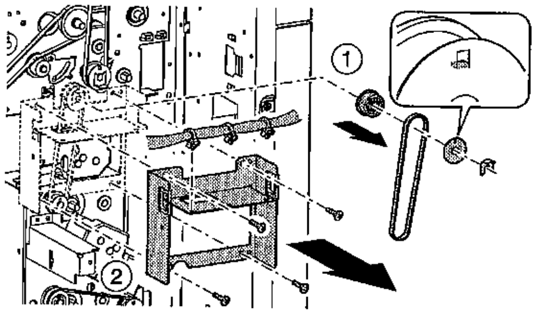
(Replacement parts)

No.	Unit	Parts	
a	3/4 paper feed drive unit	1	Paper feed clutch (Paper feed tray 3)
		2	Paper feed clutch (Paper feed tray 4)
		3	Paper feed tray 3/4 paper transport clutch 1
b	Other	1	Paper tray lift-up motor (Paper feed tray 3)
		2	Paper tray lift-up motor (Paper feed tray 4)



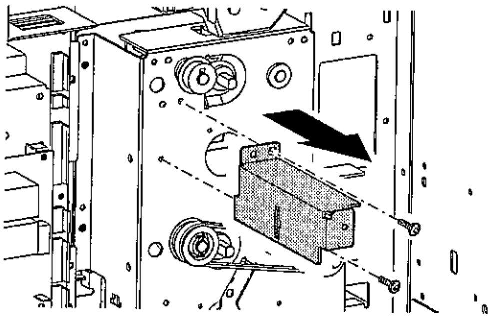
a. 3/4 paper feed drive unit

1) Remove the paper tray lift-up motor. (See "b-1. Paper tray lift-up motor (Paper feed tray 3)" in this section)
2) Remove the parts and remove the drive joint plate.

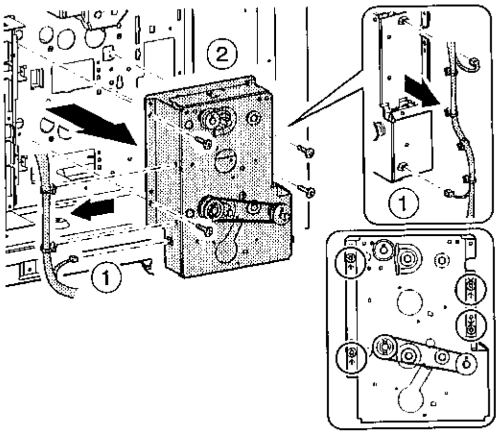


* When installing, be careful of the direction of the belt holding sheet.
* When installing, temporarily fix the 1/2 paper feed drive unit to the main unit, and install the drive joint plate. Then tighten the screw of the drive unit securely.

3) Remove the external outfit mounting plate.



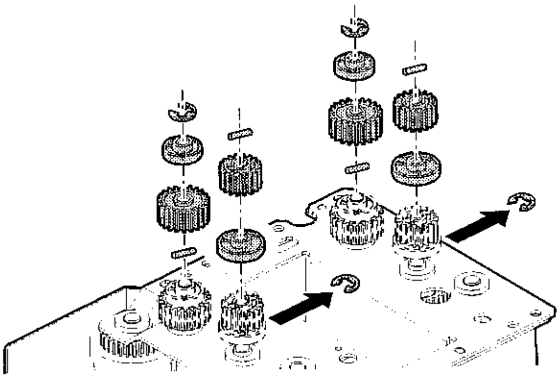
4) Disconnect the connector and remove the harness clamp. Remove the 3/4 paper feed drive unit.



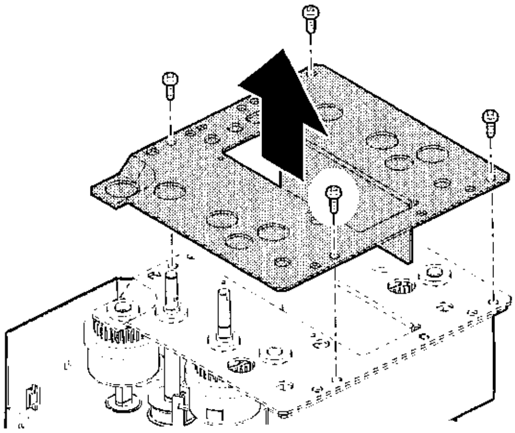
* Remove the screw which was indicated with the arrow mark.

a-1. Paper feed clutch (Paper feed tray 3)

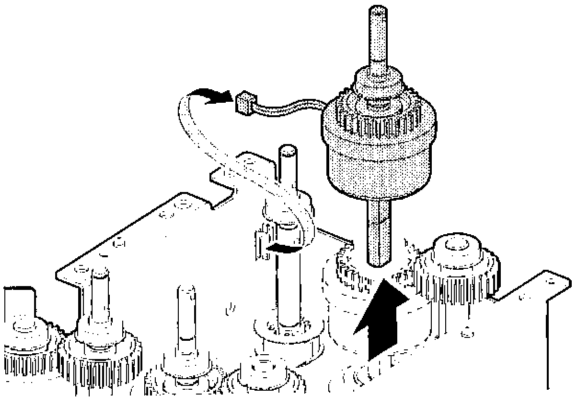
1) Remove the 3/4 paper feed drive unit. (See "a. 3/4 paper feed drive unit" in this section)
2) Remove the E-ring and remove the parts.



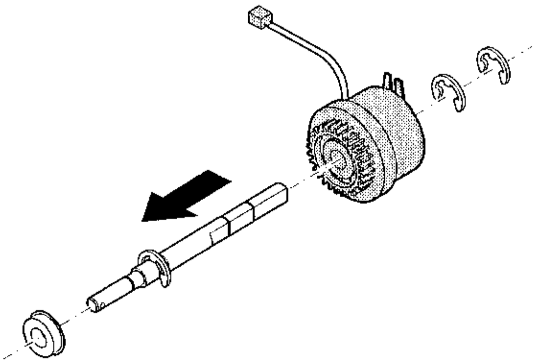
3) Remove the 3/4 drive frame lower.



4) Disconnect the connector, and remove the paper feed clutch unit.

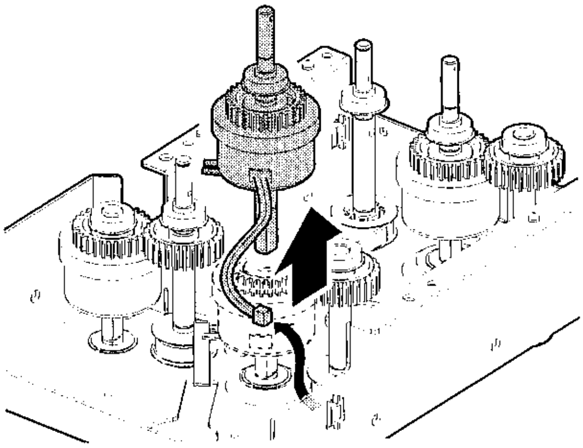


5) Remove the E-ring, and remove the paper feed clutch.

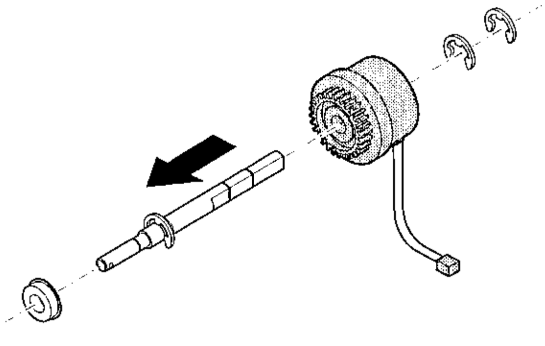


a-2. Paper feed clutch (Paper feed tray 4)

1) Remove the 3/4 paper feed drive unit. (See "a. 3/4 paper feed drive unit" in this section)
2) Remove the 3/4 drive frame lower. (See "a-1. Paper feed clutch (Paper feed tray 3)" in this section)
3) Disconnect the connector, and remove the paper feed clutch unit.



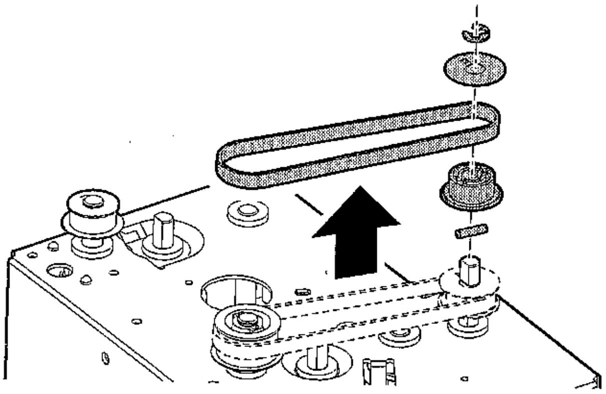
4) Remove the E-ring, and remove the paper feed clutch.



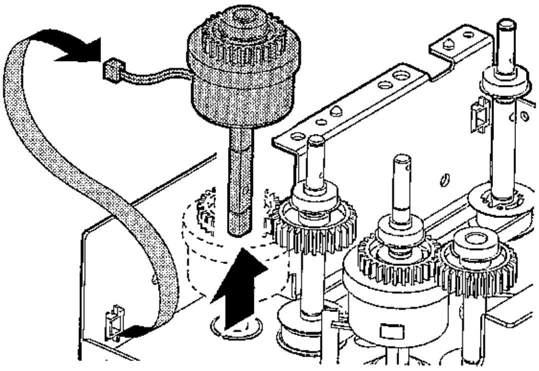
△1 : Feb. 6 2004

a-3. Paper feed tray 3/4 paper transport clutch 1

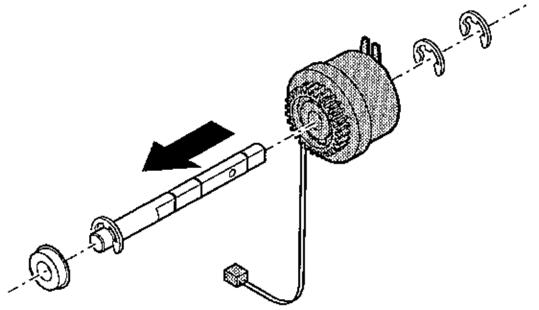
1) Remove the 3/4 paper feed drive unit. (See "a. 3/4 paper feed drive unit" in this section)
2) Remove the parts, and remove the belt.



3) Remove the 3/4 drive frame lower. (See "a-1. Paper feed clutch (Paper feed tray 3)" in this section)
4) Disconnect the connector, and remove the paper feed tray 3/4 paper transport clutch 1 unit.



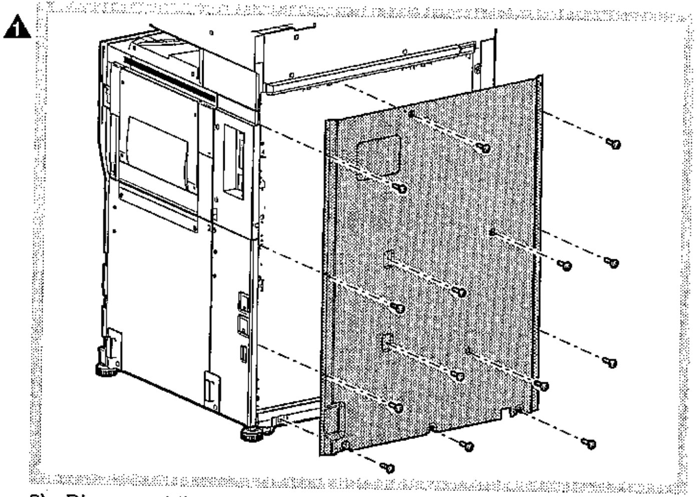
5) Remove the E-ring, and remove the paper feed tray 3/4 and the paper transport clutch 1.



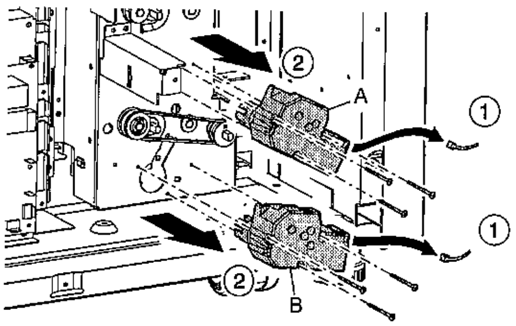
b-1. Paper tray lift-up motor (Paper feed tray 3)

b-2. Paper tray lift-up motor (Paper feed tray 4)

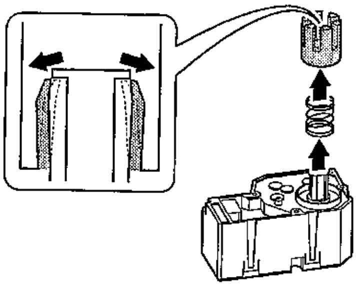
1) Remove the rear cabinet.



2) Disconnect the connector, and remove the paper tray lift-up motor (paper feed tray 3) (A) and the paper tray lift-up motor (Paper feed tray 4) (B).



3) Release the pawl, and remove the lift-up coupling. Remove the lift-up spring from the lift-up motor.



△1 : Feb. 6 2004

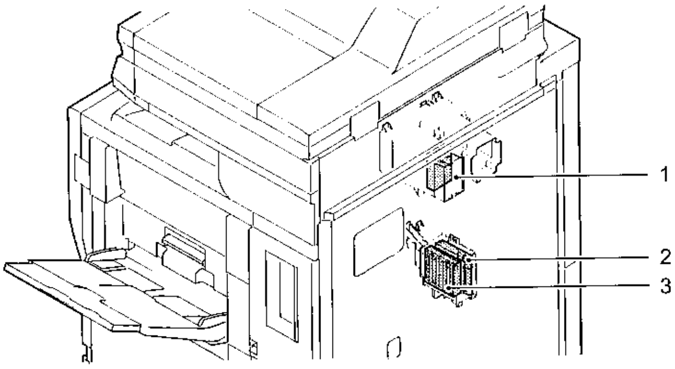
9. Filters

A. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ⊔: Shift position

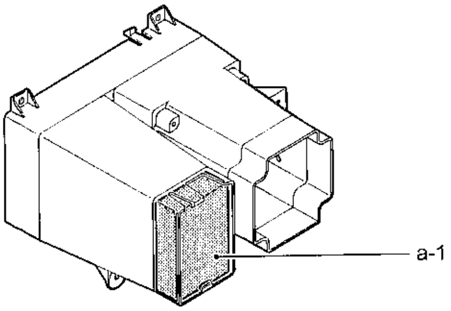
		AR-M550U/N (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620U/N, AR-M700U/N (PM: 300k)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Filters	1	Ozone filter		▲	▲	▲	▲	▲	▲	▲	▲	
	2	DV toner filter		▲	▲	▲	▲	▲	▲	▲	▲	
	3	Toner filter		▲	▲	▲	▲	▲	▲	▲	▲	

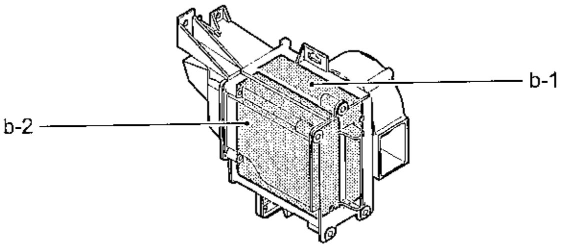


(2) Maintenance and parts replacement

(Replacement parts)

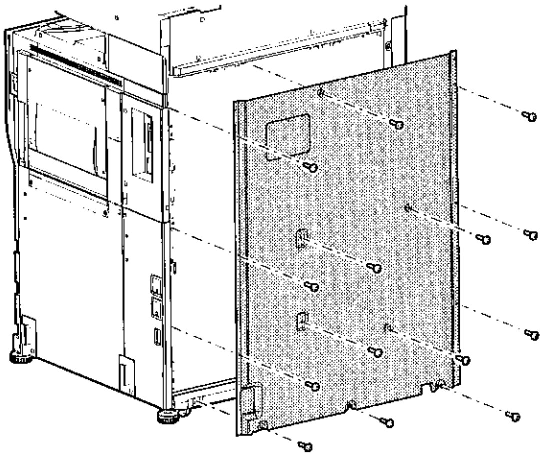
No.		Parts
a	1	Ozone filter
	2	DV ozone filter
	3	Toner filter



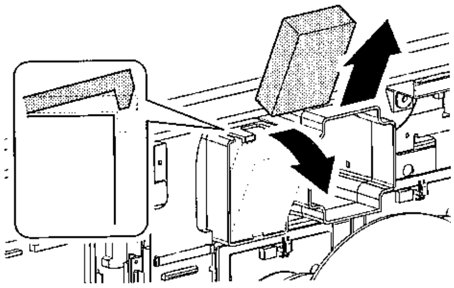


a-1. Ozone filter

1) Remove the rear cabinet.



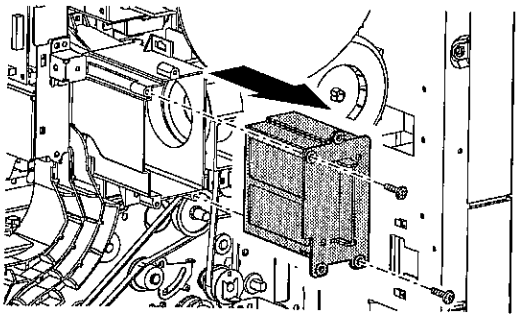
2) Release the pawl, and remove the ozone filter.



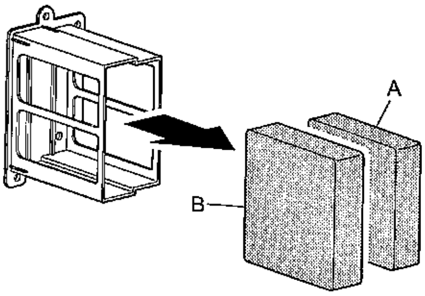
▲ **a-2. DV ozone filter**

a-3. Toner filter

1) Remove the rear cabinet. (See "a-1. Ozone filter" in this section)
2) Remove the DV filter box.



▲ 3) Remove the DV ozone filer (A) and the toner filter (B).



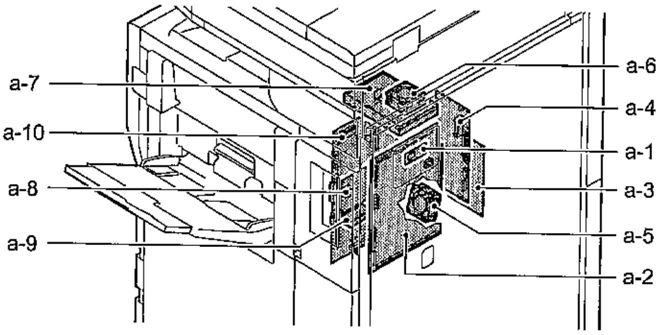
10. PWB section

A. Maintenance and parts replacement

(2) Maintenance and parts replacement

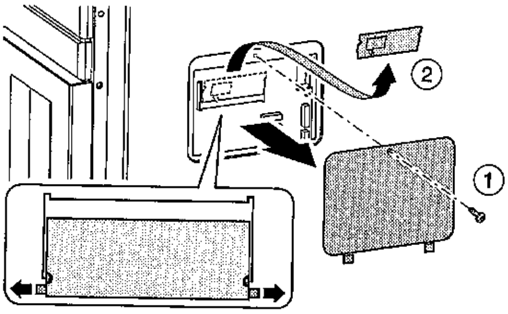
(Replacement parts)

No.	Parts	
a	1	PCU FLASH PWB
	2	PCU PWB
	3	Driver PWB
	4	Mother PWB
	5	Controller cooling fan motor
	6	HDD cooling fan motor
	7	HDD
	8	Soft NIC PWB
	9	MFP FLASH ROM PWB
	10	MFP controller PWB



a-1. PCU FLASH PWB

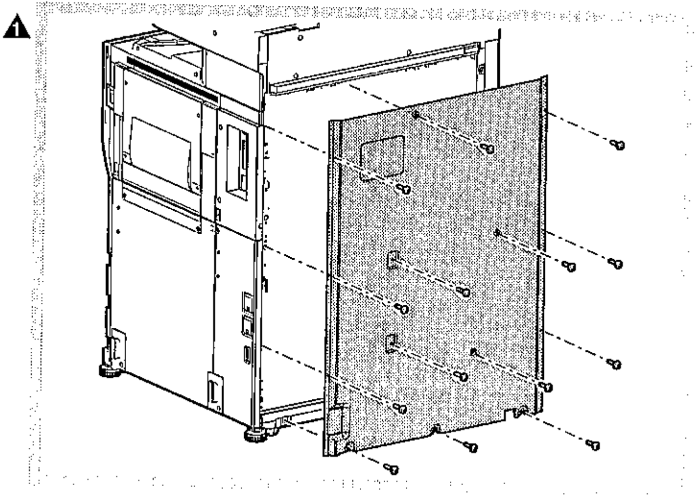
1) Remove the ROM cover. Release the lock and remove the PCU Flash PWB.



a-2. PCU PWB

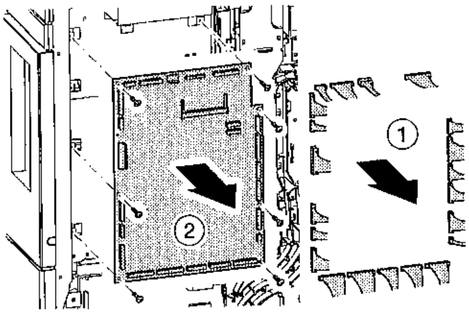
1) Remove the rear cabinet.

▲



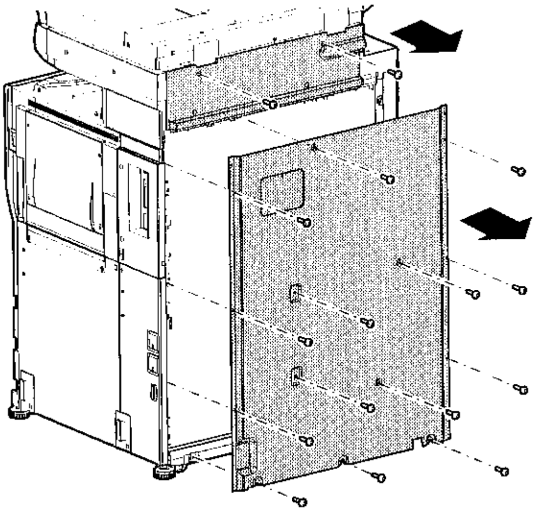
▲1 : Feb. 6 2004

2) Disconnect the connector, and remove the PCU PWB.

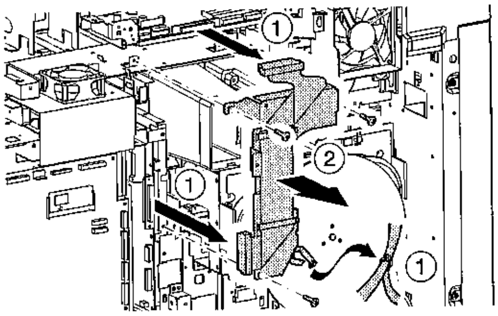


a-3. Driver PWB

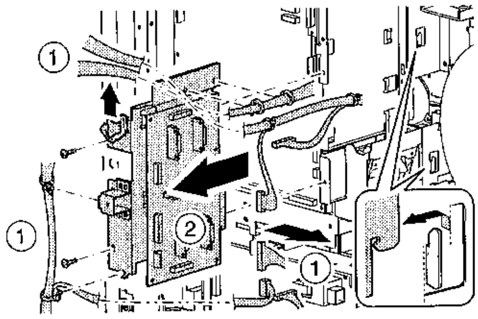
1) Remove the rear cabinet and the rear cabinet upper.



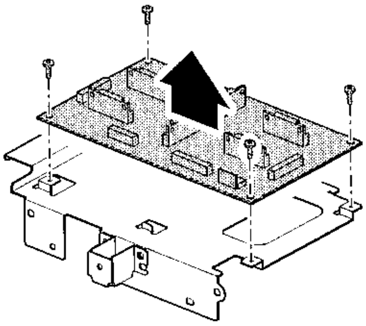
2) Disconnect the connector, and remove the harness clamp and the SCAN harness cover.



3) Remove the connector and the harness clamp. Remove the driver PWB unit.

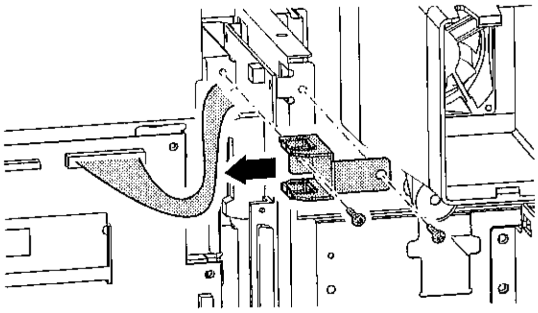


4) Remove the driver PWB.

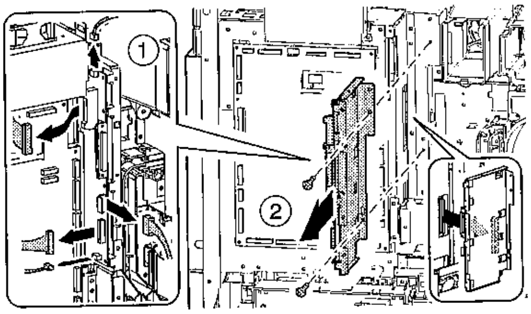


a-4. Mother PWB

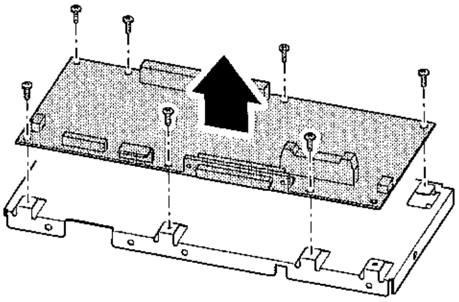
1) Remove the driver PWB unit. (See "a-3. Driver PWB" in this section)
2) Remove the harness, and remove the mother PWB stay.



3) Disconnect the connector and remove the mother PWB unit.

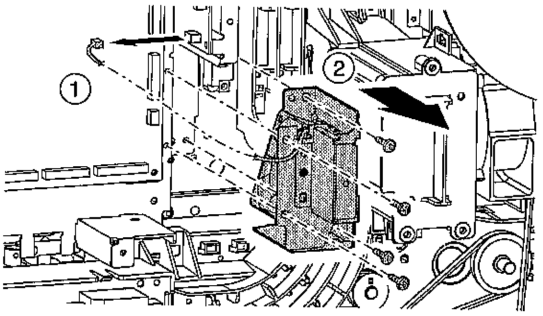


4) Remove the mother PWB.

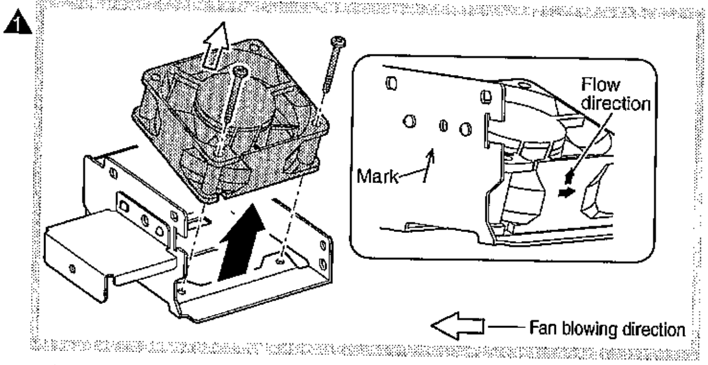


a-5. Controller cooling fan motor

1) Remove the driver PWB unit. (See "a-3. Driver PWB" in this section)
2) Disconnect the connector and remove the harness clamp. Remove the controller cooling fan motor unit.

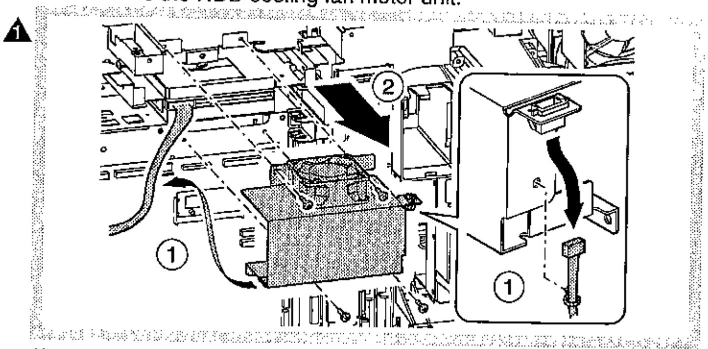


3) Remove the controller cooling fan motor.

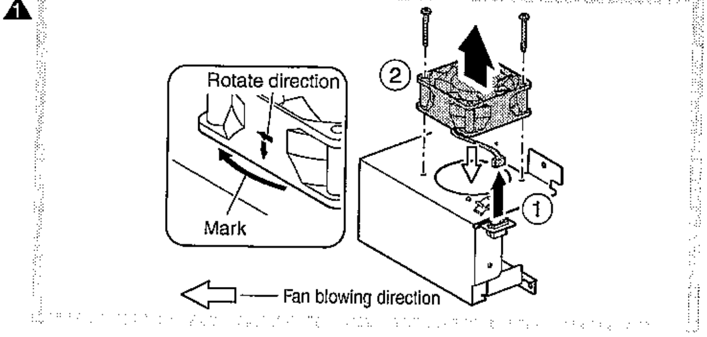

Flow direction
Mark
Fan blowing direction

a-6. HDD cooling fan motor

1) Remove the rear cabinet and the rear cabinet upper. (See "a-3. Driver PWB" in this section)
2) Disconnect the connector, and remove the harness clamp. Remove the HDD cooling fan motor unit.

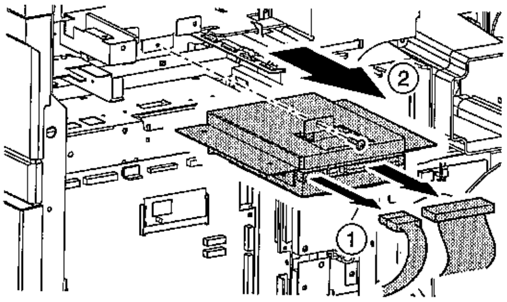


3) Disconnect the connector, and remove the HDD cooling fan motor.

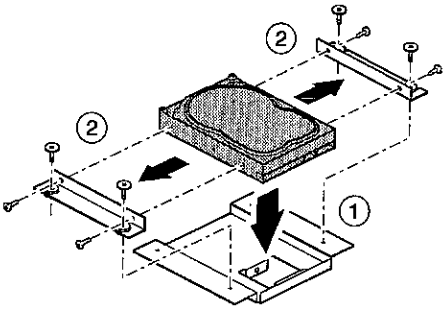

Rotate direction
Mark
②
①
Fan blowing direction

a-7. HDD

1) Remove the cooling fan motor unit. (See "a-5. Controller cooling fan motor" in this section)
2) Disconnect the connector, and remove the HDD unit.

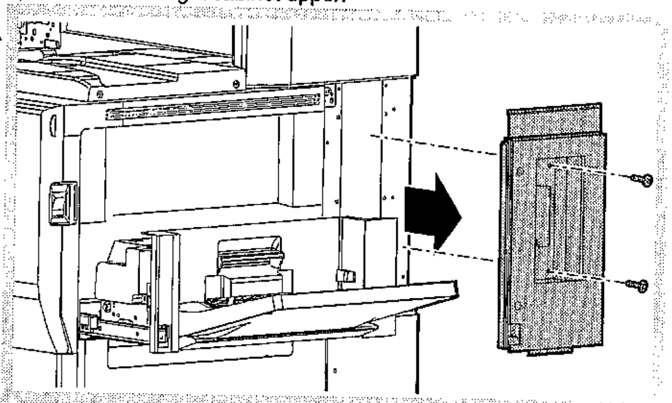


3) Remove the HDD slide plate, and remove the HDD mounting plate from the HDD.

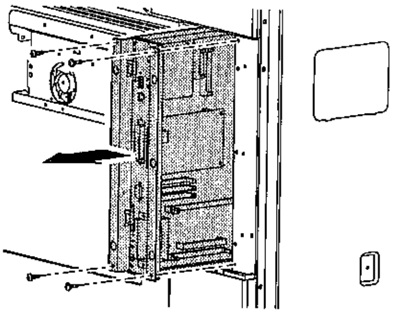


a-8. Soft NIC PWB

1) Remove the right cabinet upper.



2) Pull out the NIC control unit.



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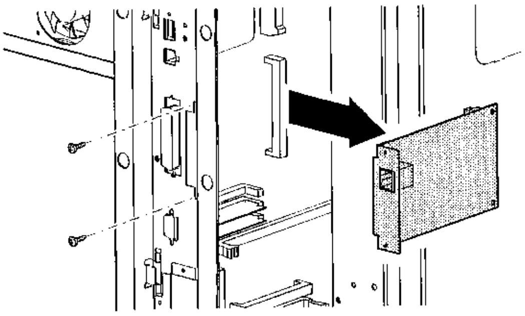
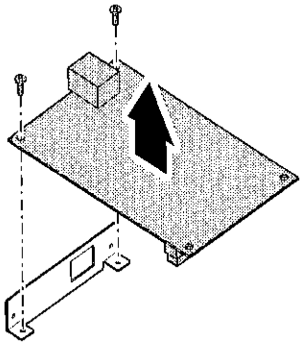
3) Remove the soft NIC PWB unit.

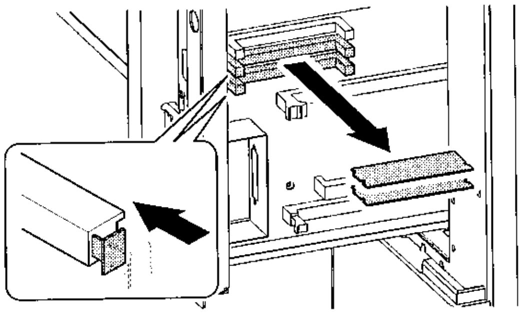


4) Remove the soft NIC PWB angle from the soft NIC PWB.



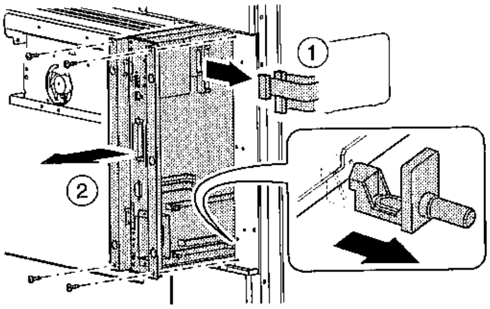
a-9. MFP FLASH ROM PWB

1) Pull out the NIC control unit. (See "a-8. Soft NIC PWB" in this section)
2) Release the lock, and remove the MFP Flash PWB.

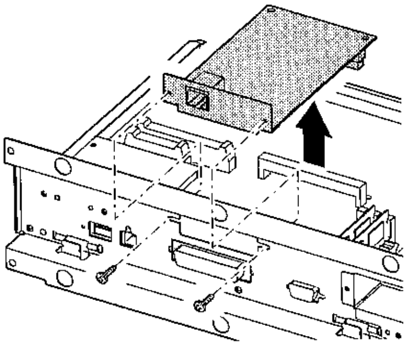


a-10. MFP controller PWB

1) Remove the manual feed cover F, the right cabinet middle, and the right cabinet upper. (See "a-8. Soft NIC PWB" in this section)
2) Pull out the NIC control unit, and remove the flat cable. Release the lock, and remove the NIC control unit.

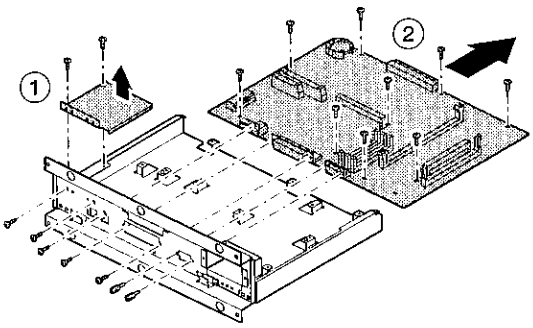


3) Remove the Soft NIC PWB unit.



4) Remove the PWB protection plate. Remove the MFP controller PWB.

▲



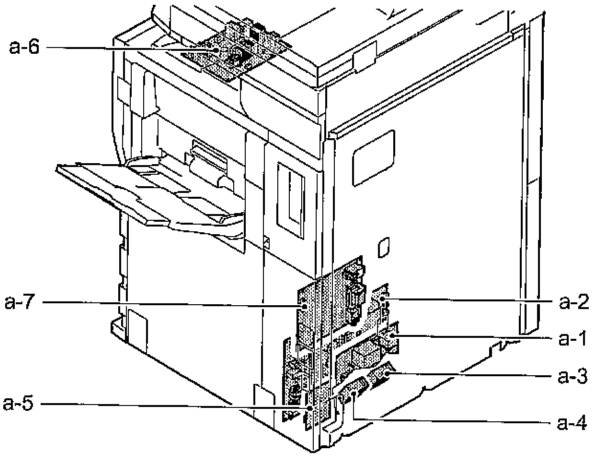
11. Power section

A. Maintenance and parts replacement

(1) Maintenance and parts replacement

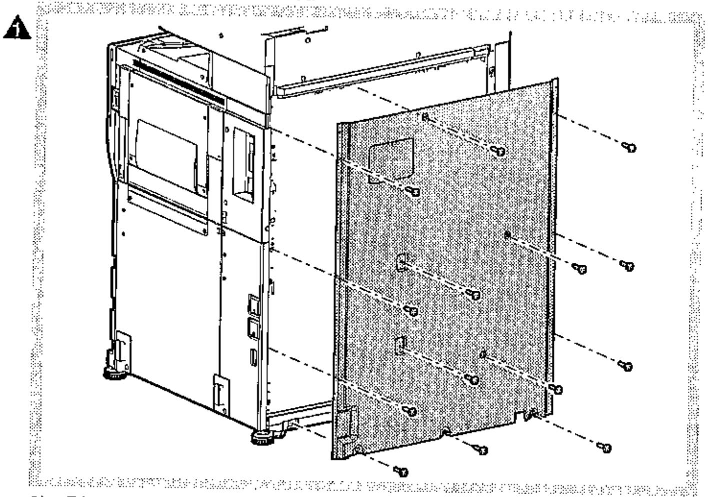
(Replacement parts)

No.	Unit	Parts	
a		1	AC power PWB
		2	DC main power PWB
		3	Power cooling fan motor 1
		4	Power cooling fan motor 2
		5	Dehumidifier heater relay PWB
		6	DC sub power PWB
		7	High voltage PWB (MC/DV/TC)

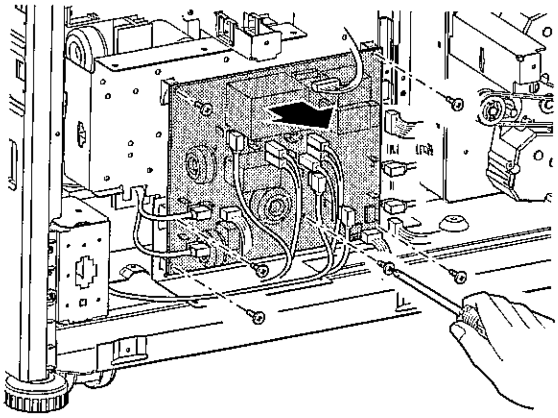


a-1. AC power PWB

1) Remove the rear cabinet.



2) Disconnect the connector, and remove the AC power PWB.

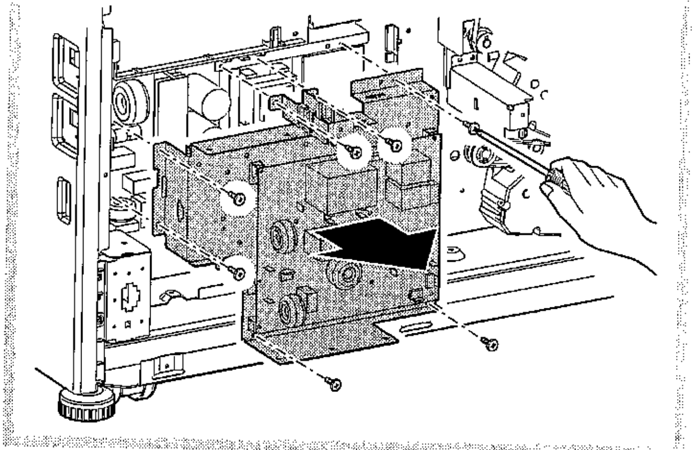


a-2. DC main power PWB

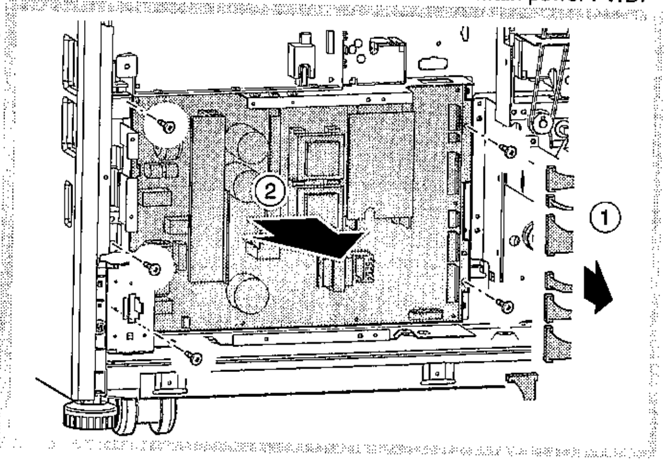
⚠ (Method 1)

1) Remove the rear cabinet. (See "a-1. AC power PWB" in this section)

⚠ 2) Disconnect the connector and remove the harness clamp. Remove the AC power PWB unit.



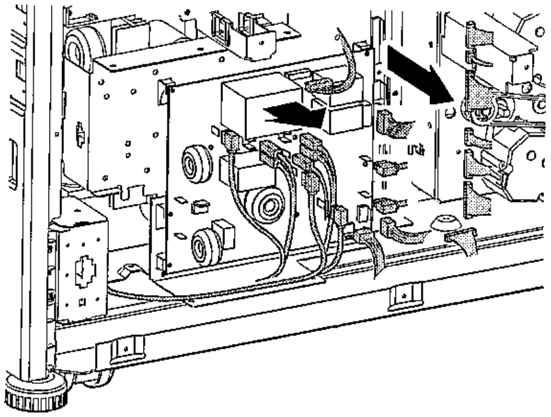
3) Disconnect the connector and remove the DC main power PWB.



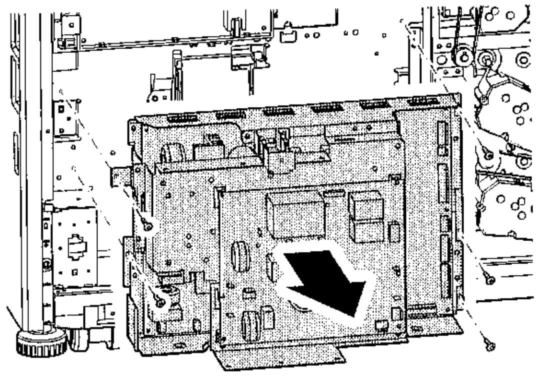
⚠ (Method 2)

1) Remove the rear cabinet. (See "a-1. AC power PWB" in this section)

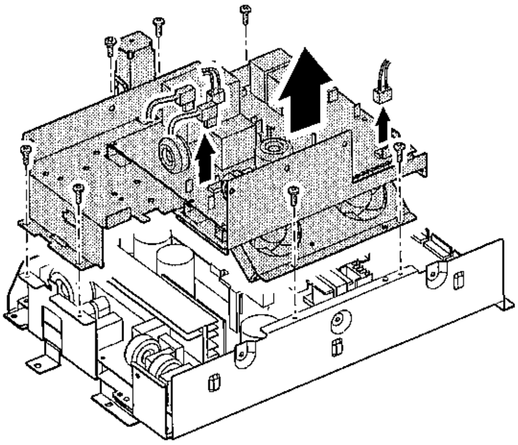
2) Disconnect the connector.



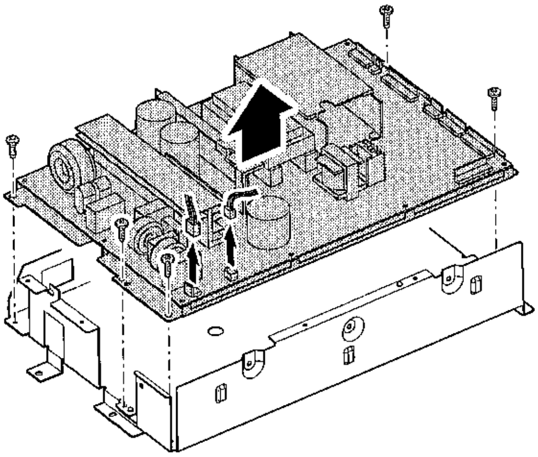
⚠ 3) Remove the AC/DC power unit.



4) Remove the AC power PWB unit.



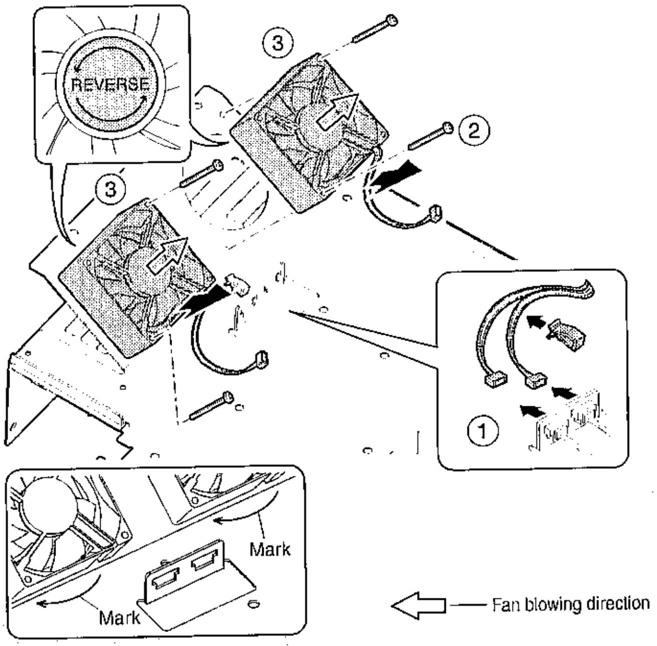
5) Remove the DC power PWB unit.



a-3. Power cooling fan motor 1

a-4. Power cooling fan motor 2

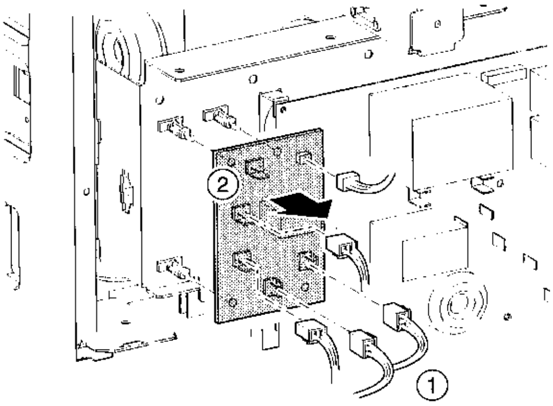
1) Remove the rear cabinet. (See "a-1. AC power PWB" in this section)
2) Disconnect the connector, and remove the AC power PWB unit.(See "a-1. AC power PWB" in this section)
3) Disconnect the connector and remove the harness clamp. Remove the power cooling fan motors 1/2.



NOTE: When assembling, fit the mark with the fan rotating direction (label on the back surface).

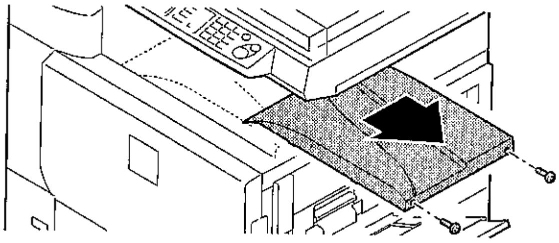
a-5. Dehumidifier heater relay PWB

1) Remove the rear cabinet. (See "a-1. AC power PWB" in this section)
2) Disconnect the connector and remove the supporter. Remove the dehumidifier heater relay PWB.

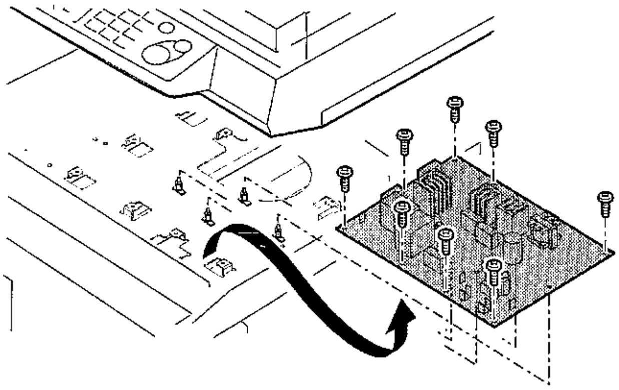


a-6. DC sub power PWB

1) Remove the paper exit tray cabinet.

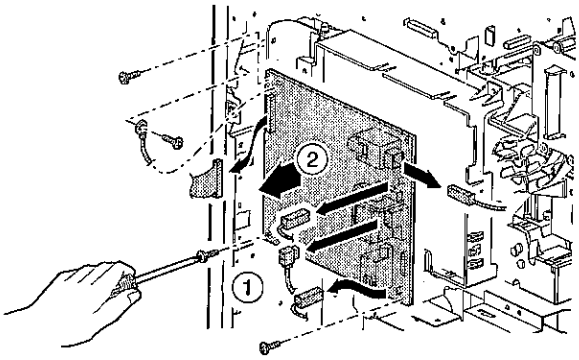


2) Disconnect the connector and remove the supporter. Remove the DC sub power PWB.



a-7. High voltage PWB (MC/DV/TC)

1) Remove the rear cabinet. (See "a-1. AC power PWB" in this section)
2) Disconnect the connector and remove the earth terminal. Remove the high voltage PWB.



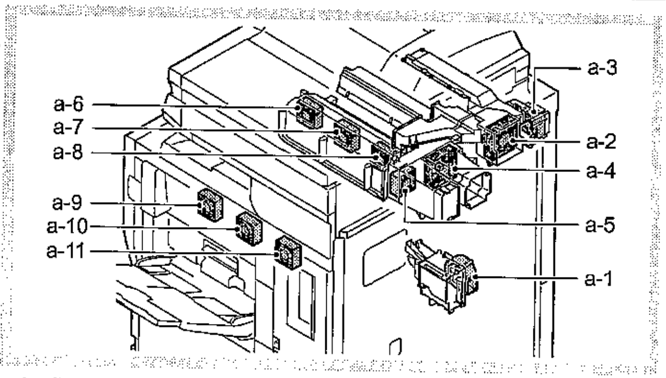
12. Fan motors

A. Maintenance and parts replacement

(1) Maintenance and parts replacement

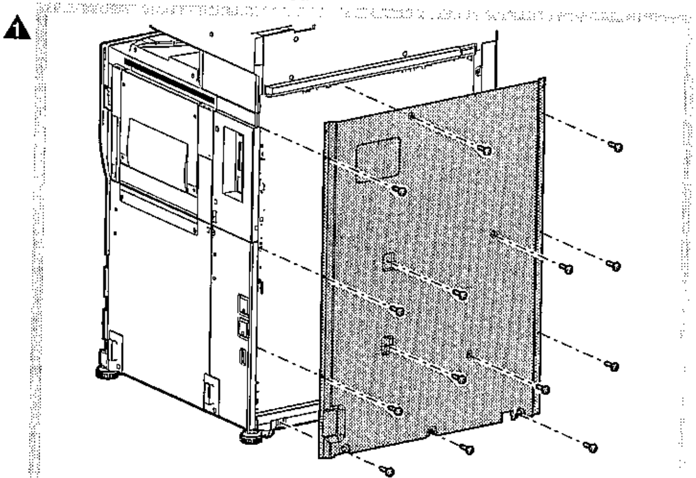
(Replacement parts)

No.	Unit	Parts	
a		1	Developing cooling fan motor
		2	Paper cooling fan motor 2
		3	Fusing cooling fan motor 2
		4	Process exhaust fan motor 5
		5	Process exhaust fan motor 4
		6	Process exhaust fan motor 1
		7	Process exhaust fan motor 2
		8	Process exhaust fan motor 3
		9	Process cooling fan 1
		10	Process cooling fan 2
		11	Process cooling fan 3

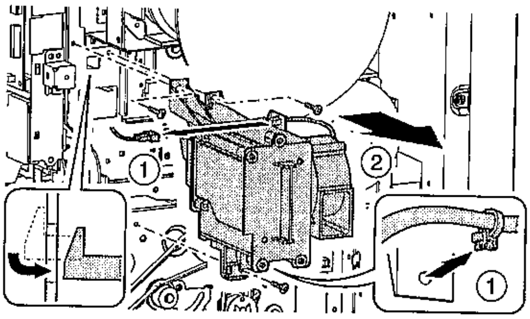


a-1. Developing cooling fan motor

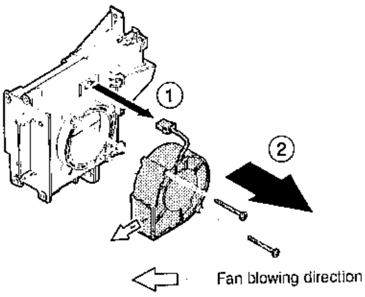
1) Remove the rear cabinet.



2) Disconnect the connector and remove the harness clamp. Remove the DV fan unit.

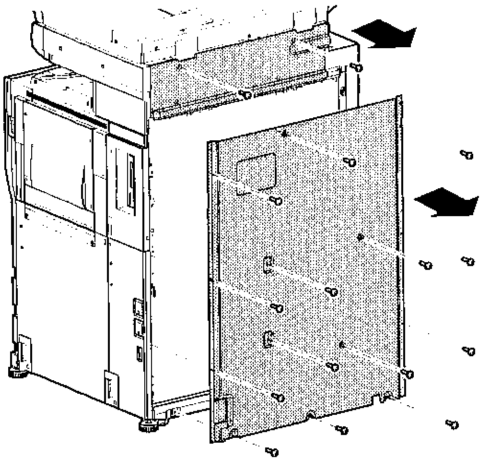


3) Disconnect the connector, and remove the DV fan.

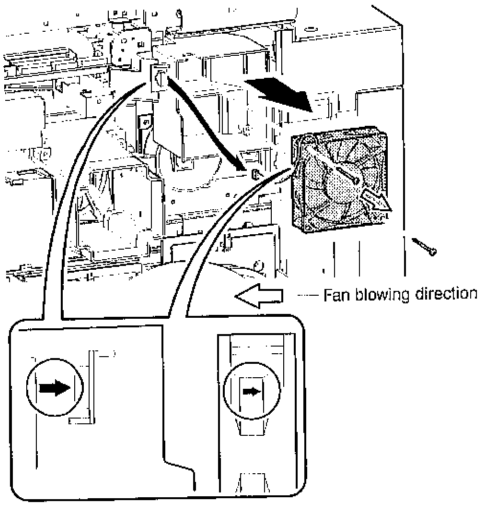


a-2. Paper cooling fan motor 2

1) Remove the rear cabinet and the rear cabinet upper.



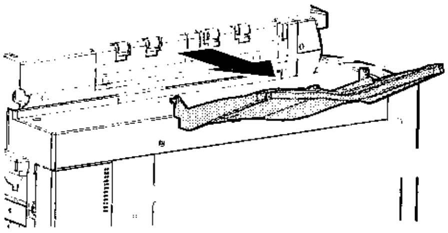
2) Disconnect the connector, and remove the paper cooling fan motor.



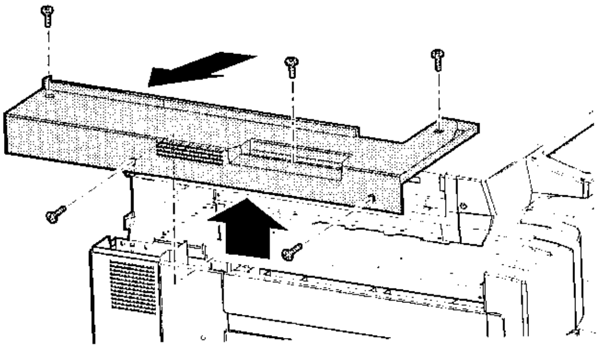
NOTE: When installing, arrange so that the arrow mark on the side of the duct faces in the same direction with the arrow mark on the side of the fan.

a-3. Fusing cooling fan motor 2

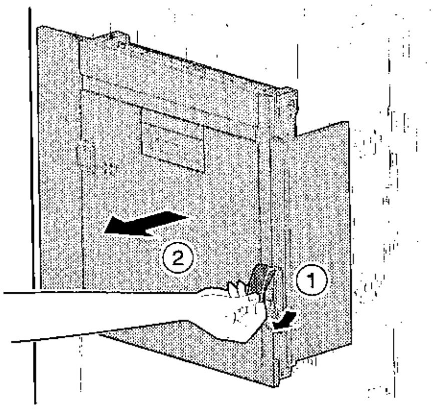
1) Remove the rear cabinet. (See "a-1. Developing cooling fan motor" in this section)
2) Remove the tray.



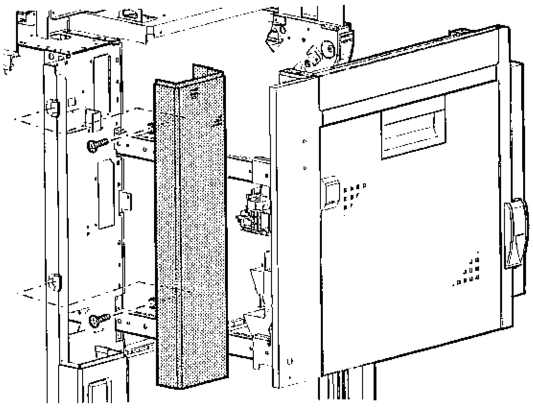
3) Remove the left cover cabinet.



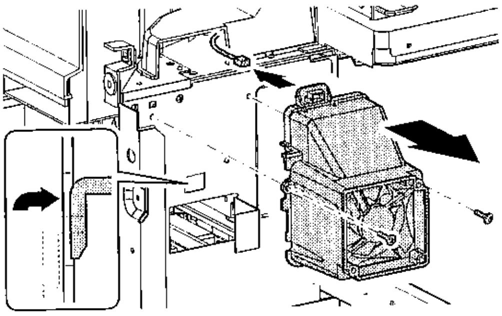
4) Open the left door.



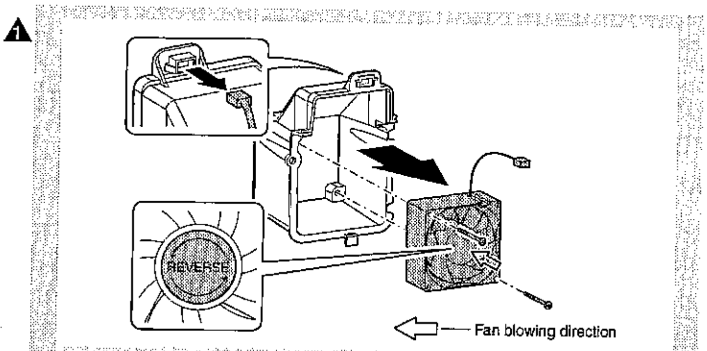
5) Remove the left cabinet upper.



6) Disconnect the connector, and remove the paper exit rear duct unit.



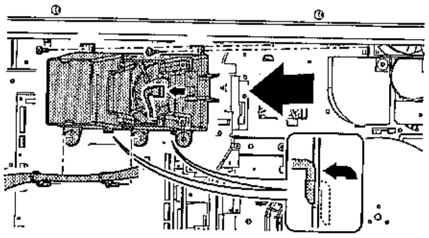
7) Disconnect the connector, and remove the fusing cooling fan motor.



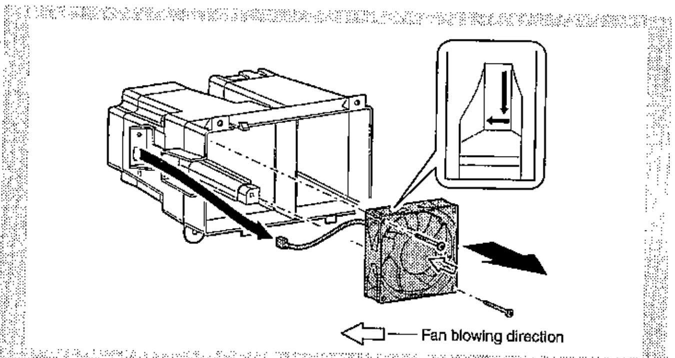
NOTE: Be careful of the direction of the fan.

a-4. Process exhaust fan motor 5

1) Remove the rear cabinet. (See "a-1. Developing cooling fan motor" in this section)
2) Disconnect the connector and remove the harness clamp. Remove the sub duct unit.



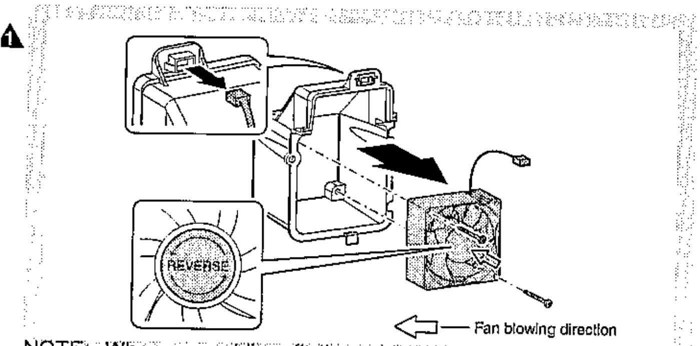
3) Disconnect the connector and remove the process exhaust fan motor 5.



NOTE: Be careful of the direction of the fan.

a-5. Process exhaust fan motor 4

1) Remove the rear cabinet. (See "a-1. Developing cooling fan motor" in this section)
2) Disconnect the connector and remove the harness clamp. Remove the sub duct unit. (See "a-4. Process exhaust fan motor 5" in this section)
3) Disconnect the connector and remove the process exhaust fan motor 4.



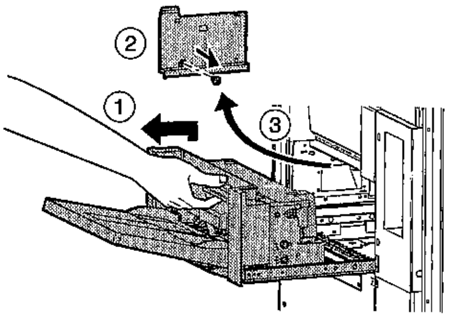
NOTE: When assembling, fit the mark with the fan rotating direction (label on the back surface).

a-6. Process exhaust fan motor 1

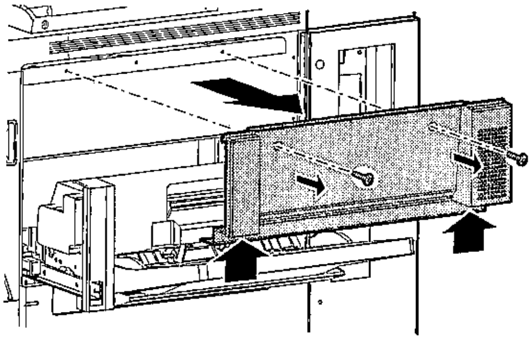
a-7. Process exhaust fan motor 2

a-8. Process exhaust fan motor 3

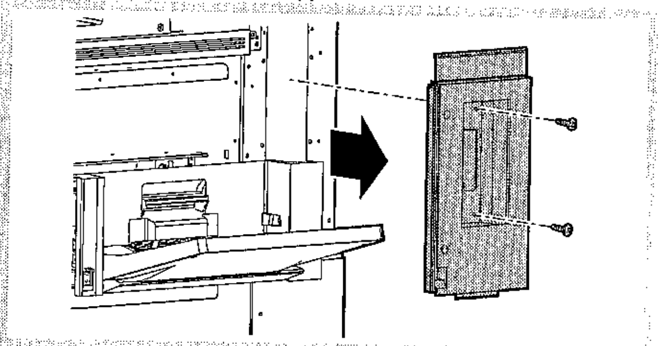
1) Remove the SPF unit. (See "6. Fusing section" in the "a. SPF unit")
2) Remove the scanner unit. (See "a. Scanner unit" in the "5. Scanner section")
3) Pull out the multi paper feed tray unit, and remove the manual paper feed cover F.



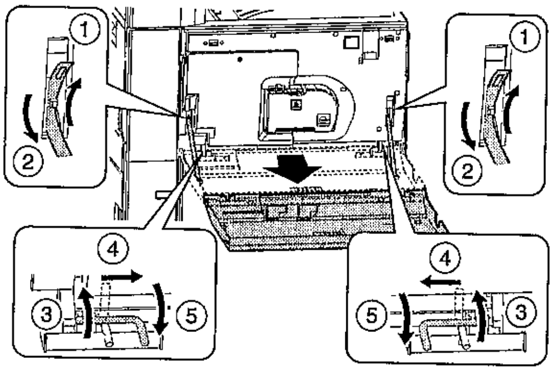
4) Remove the right cabinet middle.



5) Remove the right cabinet upper.



6) Remove the front cabinet band, and remove the3 front cabinet.



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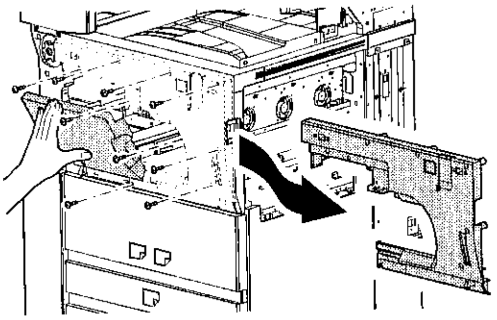
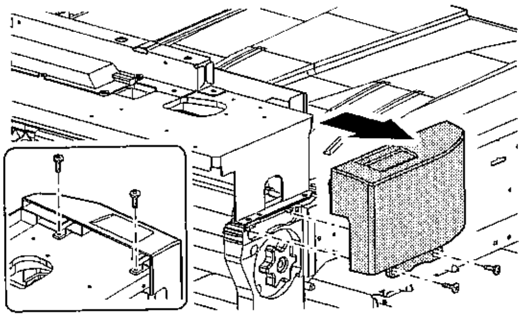
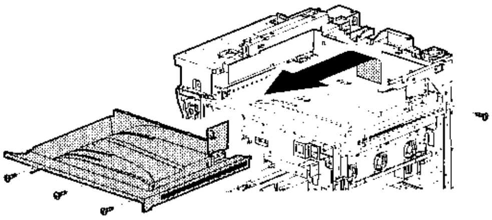
7) Remove the toner bottle. (See "a. Toner bottle unit" in "[Toner hopper and toner bottle section]")
8) Remove the toner hopper unit. (See "b. Toner hopper unit" in "[Toner hopper and toner bottle section]")
9) Remove the developing unit. (See "a. Developing unit" in the "[Developer tank section]")
10) Remove the process unit. (See "a. Process unit" in the "[OPC drum section]")
11) Raise the process DV cover diagonally, and remove the front right cover.



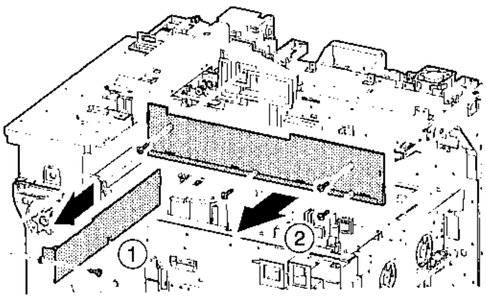
12) Remove the front cabinet upper.



13) Remove the paper exit tray cabinet unit.

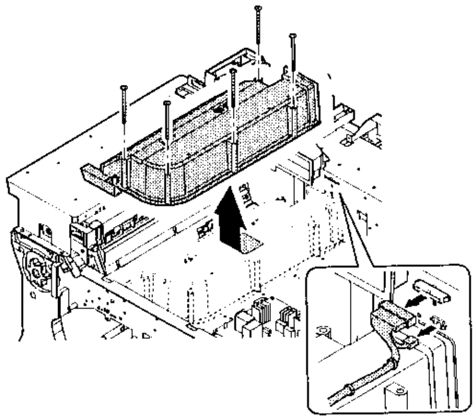


14) Remove the paper exit port cabinet, and remove the paper exit tray cabinet C.

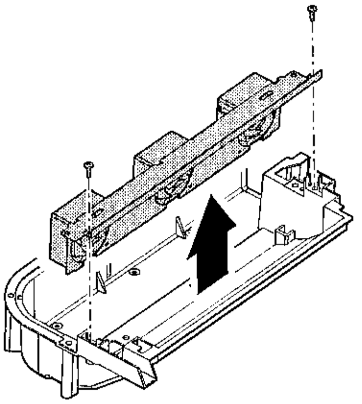


15) Disconnect the connector and remove the harness clamp. Remove the main duct unit.

⚠

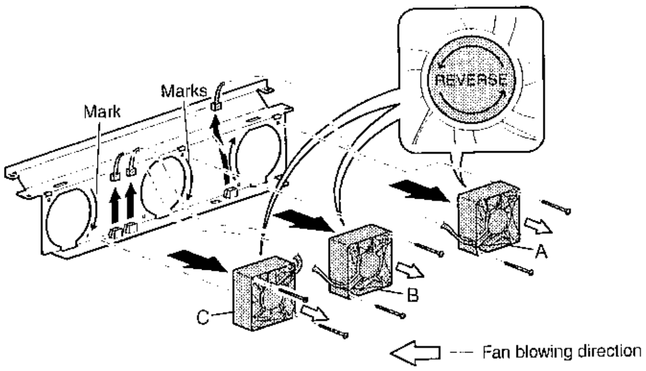


16) Remove the fan unit.



17) Disconnect the connector and remove the process exhaust fan motor 1 (A), 2 (A), and 3 (C).

⚠



NOTE: When assembling, fit the mark with the fan rotating direction (label on the back surface).

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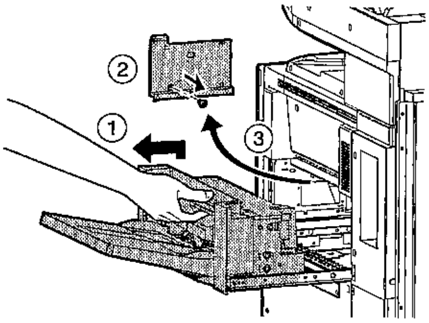
a-9. Process cooling fan motor 1 (LSU, process section)

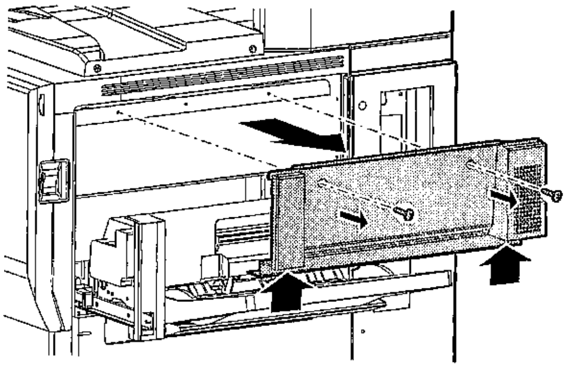
a-10. Process cooling fan motor 2 (LSU, process section)

a-11. Process cooling fan motor 3 (LSU, process section)

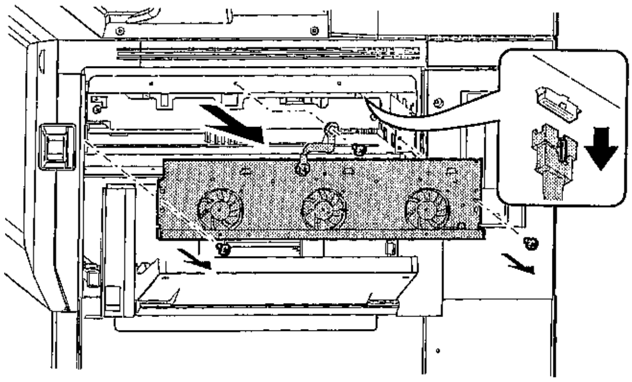
1) Pull out the multi paper feed tray, and remove the manual paper feed cover F.



2) Pushing the lower part, remove the right cabinet center.

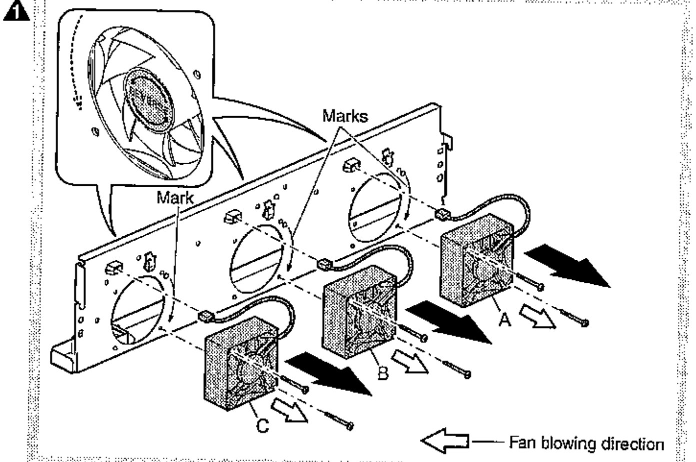


3) Disconnect the connector, and remove the process cooling fan unit.



4) Disconnect the connector, and remove the process cooling fan motors 1 (A), 2 (B), and 3 (C).

⚠



NOTE: When assembling, fit the mark with the fan rotating direction (label on the back surface).

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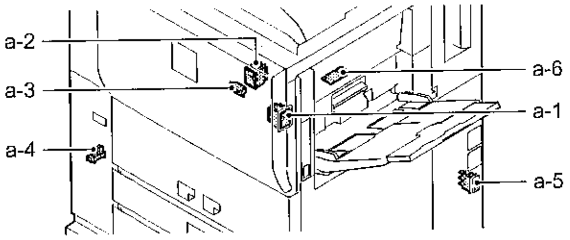
13. Sensors and switches

A. Parts replacement

(1) Parts replacement

(Replacement parts)

No.	Unit	Parts	
a		1	Power switch
		2	Main power switch
		3	Front door open/close detector
		4	Left door open/close detector
		5	Dry heater switch
		6	Machine temperature sensor

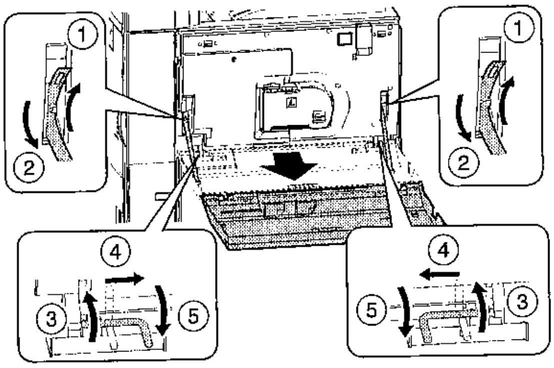


a-1. Power switch

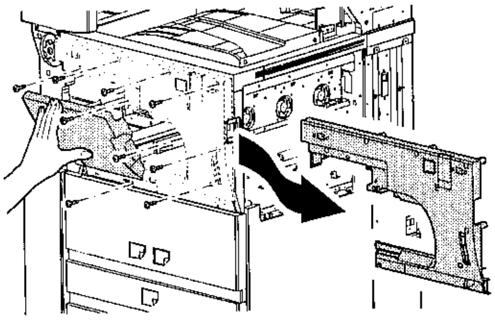
a-2. Main power switch

a-3. Front door open/close detector

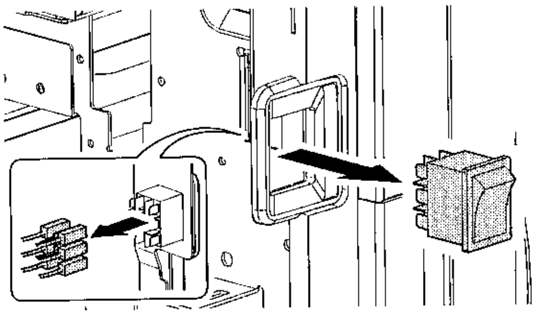
1) Remove the front cabinet band, and remove the3 front cabinet.



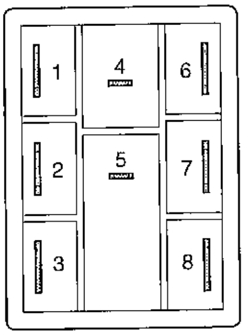
2) Remove the toner bottle. (See "a. Toner bottle unit" in "[Toner hopper and toner bottle section]")
3) Remove the toner hopper unit. (See "b. Toner hopper unit" in "[Toner hopper and toner bottle section]"
4) Remove the developing unit. (See "a. Developing unit" in the "[Developer tank section]")
5) Remove the process unit. (See "a. Process unit" in the "[OPC drum section]")
6) Raise the process DV cover diagonally, and remove the front right cover.



7) Disconnect the connector, and remove the power switch.



NOTE: When installing, be careful of the connector connecting position and the installing direction. Also be careful not to break the SW pawl.

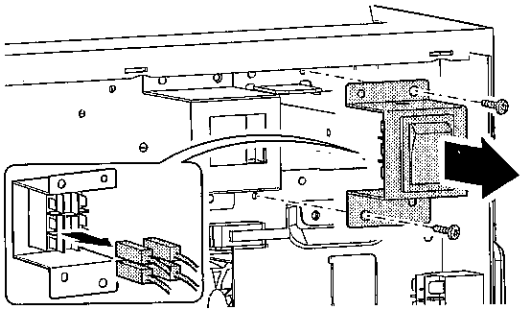


Power switch (Connector surface)

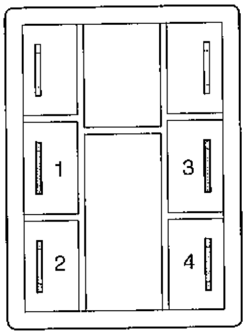
[Connector connecting position]

	Connector color	Line color
1	Yellow	Black
2	White	Black
3	Blue	Black
4	White	Red
5	White	Brown
6	Yellow	White
7	White	White
8	Blue	White

8) Disconnect the connector, and remove the main power switch unit.



NOTE: When installing, be careful of the connector connecting position and the installing direction. Also be careful not to break the SW pawl.

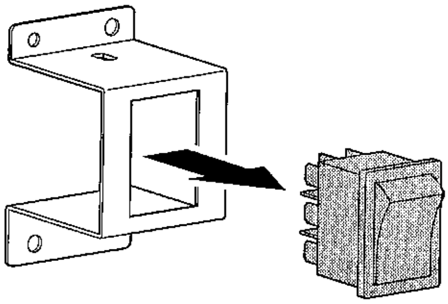


Main power switch
(Connector surface)

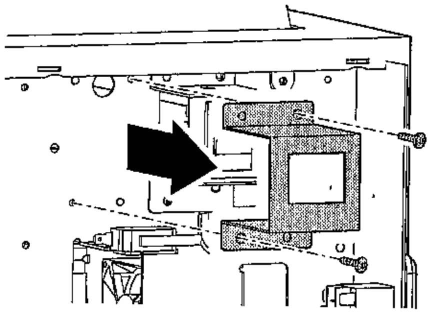
[Connector connecting position]

	Connector color	Line color
1	White	Black
2	Black	Black
3	White	White
4	Black	White

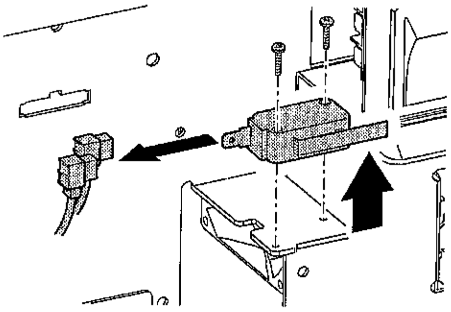
9) Remove the main power switch.



10) Remove the counter mounting plate.

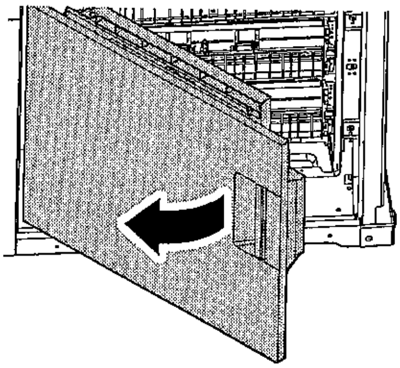


11) Disconnect the connector and remove the front door open/close switch unit.

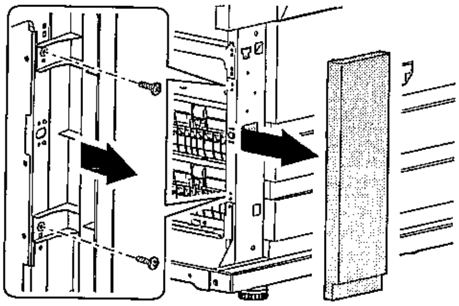


a-4. Left door open/close detector

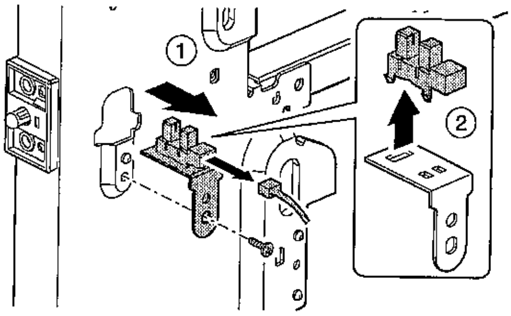
1) Open the left door.



2) Remove the left front cabinet

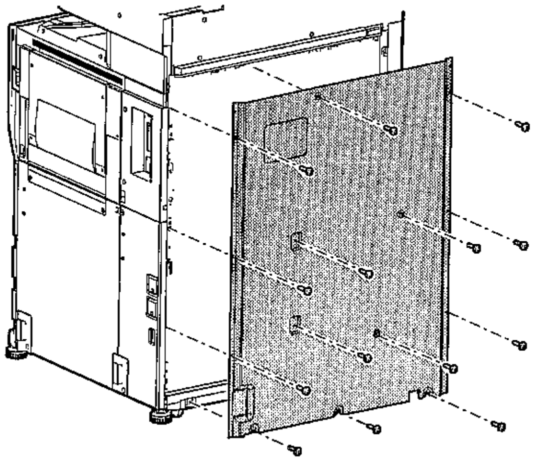


3) Disconnect the connector, and remove the left door open/close detector unit. Remove the left door open/close detector.

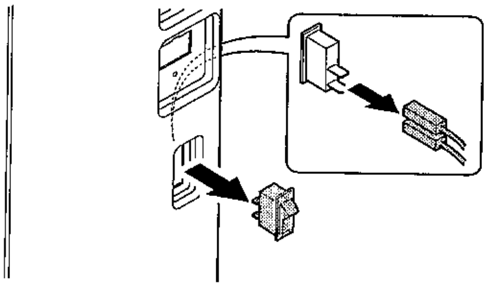


a-5. Dry heater switch

1) Remove the rear cabinet.

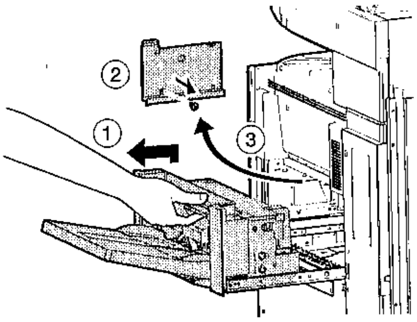


2) Disconnect the connector, and remove the dry heater switch.

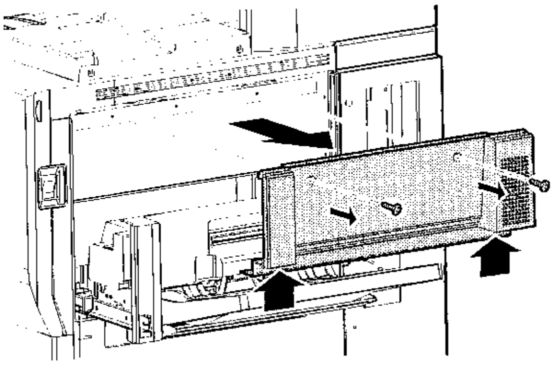


⚠1 a-6. Machine temperature sensor

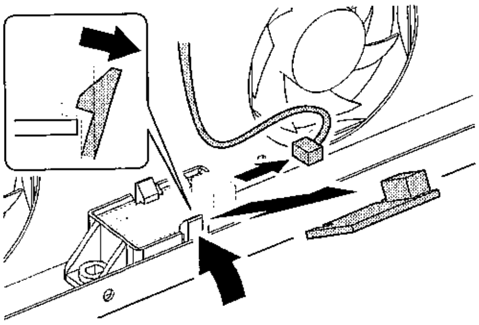
1) Pull out the multi paper feed tray, and remove the manual paper feed cover F.



2) Pushing the lower part, remove the right cabinet center.



3) Disconnect the connector, release the pawl, and remove the machine temperature sensor.



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[7] SETTING AND ADJUSTMENTS

Each adjustment item in the adjustment item list is associated with a specific JOB number. Perform the adjustment procedures in the sequence of Job numbers from the smallest to the greatest.

However, there is no need to perform all the adjustment items. Perform only the necessary adjustments according to the need.

Unnecessary adjustments can be omitted. Even in this case, however, the sequence from the smallest to the greatest JOB number must be observed.

If the above precaution should be neglected, the adjustment would not complete normally or trouble may occur.

Job No	Adjustment item list			Simulation
ADJ 1	Adjusting high voltage values	ADJ 1A	Adjust the main charger grid voltage	8-2
		ADJ 1B	Adjust the developing bias voltage	8-1
		ADJ 1C	Adjust the transfer current	8-6, 8-17, 8-18
ADJ 2	Adjusting the developing unit	ADJ 2A	Adjust the developing doctor gap	
		ADJ 2B	Adjust the developing roller main pole	
ADJ 3	Adjusting image distortions	ADJ 3A	Adjust print image distortions (LSU parallelism adjustment)	64-1
		ADJ 3B	Adjust the scanner (reading) unit parallelism	
		ADJ 3C	Adjust scanned image distortions in the sub-scanning direction	
		ADJ 3D	Adjust scanned image distortions in the main scanning direction - 1	
		ADJ 3E	Adjust scanned image distortions in the main scanning direction - 2	
ADJ 4	Adjusting the SPF parallelism	ADJ 4A	Adjust SPF levelness	
		ADJ 4B	Adjust SPF skews	64-1
ADJ 5	Adjusting the image focus	ADJ 5A	Adjust the image focus in original table mode and SPF front-face mode (CCD)	48-1
		ADJ 5B	Adjust the image focus in SPF back-face mode (CIS)	
ADJ 6	Adjusting the image magnification	ADJ 6A	Adjust the image magnification in the main scanning direction in original table mode (CCD)	48-1
		ADJ 6B	Adjust the image magnification in the sub-scanning direction in original table mode (CCD)	48-1
		ADJ 6C	Adjust the image magnification in the main scanning direction in SPF front-face mode (CCD)	48-1
		ADJ 6D	Adjust the image magnification in the main scanning direction in SPF back-face mode (CIS)	48-1
		ADJ 6E	Adjust the image magnification in the sub-scanning direction in SPF mode	48-1, 48-5
ADJ7	Adjusting the image off-center	ADJ 7A	Adjust the print image off-center (print engine section)	50-5 (50-10)
		ADJ 7B	Adjust the scanned image off-center in original table mode (scan section)	50-12
		ADJ 7C	Adjust the scanned image off-center in SPF front-face mode (scan section)	50-12
		ADJ 7D	Adjust the scanned image off-center in SPF back-face mode (scan section)	50-12
ADJ 8	Adjusting the image position, image loss, and void area	ADJ 8A	Adjust copied image loss/void area in original table mode	50-1
		ADJ 8B	Adjust the original scan start position (adjust the scanner read position in SPF-mode front face scan)	53-8
		ADJ 8C	Adjust the copied image loss/void area in SPF mode	50-6
		ADJ 8D	Adjust the image loss in scanner mode	50-27
		ADJ 8E	Adjust the image loss for images sent in fax mode	50-27
ADJ 9	Adjusting the copied image quality	ADJ 9A	Adjust the binary mode copy density for all modes at once	46-2
		ADJ 9B	Adjust the copy density in text binary mode	46-9, 10, 11
		ADJ 9C	Adjust the copy density in text/photo binary mode	
		ADJ 9D	Adjust the copy density in photo binary mode	
		ADJ 9E	Adjust the copied image gamma in copy mode	46-18
		ADJ 9F	Adjust the copied image sharpness	46-31
ADJ 10	Adjusting the print quality in fax mode	ADJ 10A	Adjust the fax mode print density for all modes at once	46-12
		ADJ 10B	Adjust the fax mode print density in standard mode	46-13, 46-14, 46-15, 46-16, 46-45
		ADJ 10C	Adjust the fax mode print density in small-character mode	
		ADJ 10D	Adjust the fax mode print density in fine mode	
		ADJ 10E	Adjust the fax mode print density in super fine mode	
		ADJ 10F	Adjust the fax mode print density in 600dpi mode	

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Job No	Adjustment item list			Simulation
ADJ11	Adjusting the image quality in scan mode	ADJ 11A	Adjust the scan mode image density for all modes at once	46-21
		ADJ 11B	Scan mode image density adjustment/individual setup (standard mode)	46-21, 46-22, 46-23, 46-24, 46-25
		ADJ 11C	Scan mode image density adjustment/individual setup (small-character mode)	
		ADJ 11D	Scan mode image density adjustment/individual setup (fine mode)	
		ADJ 11E	Scan mode image density adjustment/individual setup (super fine mode)	
		ADJ 11F	Adjust the image gamma in scanner mode	46-27
ADJ12	Common image quality adjustments for all of copy, scan, and fax modes	ADJ 12A	Correct the image density in original table mode/SPF mode (Copy mode)	46-20
		ADJ 12B	Set up the auto mode operation for copy, scan, and fax	46-19
		ADJ 12C	Adjust the shading reference value (gain adjustment)	46-17
ADJ13	Adjusting the fusing paper guide position			
ADJ 14	Adjusting the paper size detection	ADJ 14A	Adjust the paper width sensor for the manual paper feed tray	40-2
		ADJ 14B	Adjust the paper width sensor for paper feed tray 3	40-12
		ADJ 14C	Adjust the paper width sensor for the SPF paper feed tray	53-6
ADJ 15	Adjusting the original size detection (in original table mode)	ADJ 15A	Adjust the detection point of the original size sensor (in original table mode)	41-1
		ADJ 15B	Adjust the sensitivity of the original size sensor	41-2
ADJ16	Adjusting the touch panel coordinates			65-1
ADJ17	Adjusting the supply voltage			

ADJ 1 Adjusting high voltage values

Note: Adjusting the output voltage requires the ability to measure internal impedance of 1000 MW.

ADJ 1A Adjust the main charger grid voltage

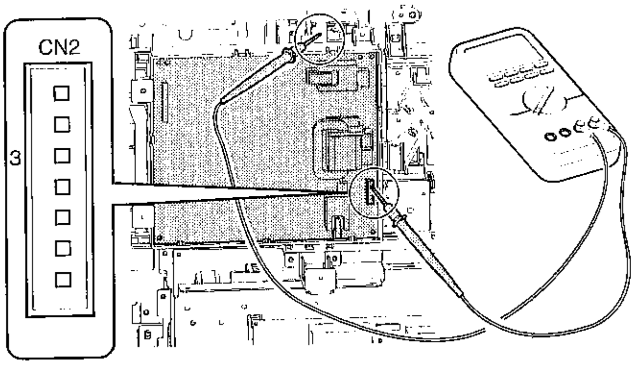
This adjustment is needed in the following situations:

- The high voltage power PWB (MC/DV/TC) has been replaced.
- U2 trouble has occurred.
- The PCU PWB has been replaced.
- The EEPROM of the PCU PWB has been replaced.

(Main charger grid voltage adjustment)

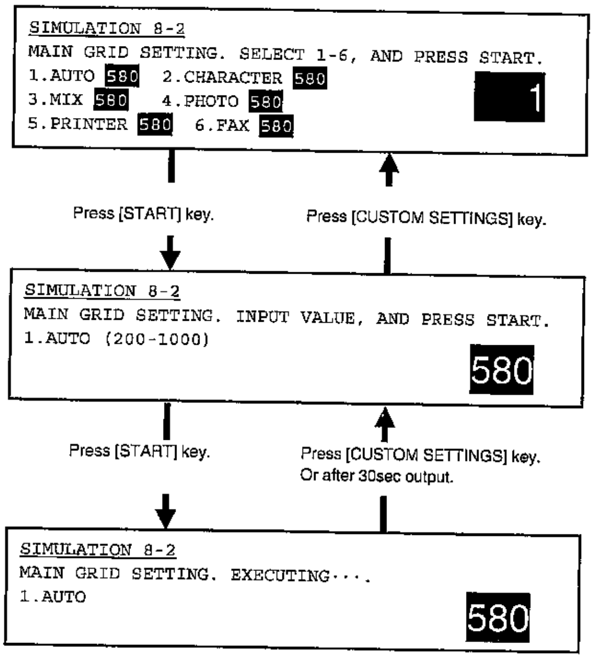
Item/operation mode		Simulation				High voltage power PWB (MC/DV/TC)		
				Setting range	Default	Connector	Pin #	Actual voltage
Copy	Auto mode	8-2	AUTO	200 – 1000	580	CN2	3	–590±2v
	Text mode		CHARACTER	200 – 1000	580	CN2	3	–590±2v
	Text/photo mode		MIX	200 – 1000	580	CN2	3	–590±2v
	Photo mode		PHOTO	200 – 1000	580	CN2	3	–590±2v
Printer	All modes		PRINTER	200 – 1000	580	CN2	3	–590±2v
FAX	All modes		FAX	200 – 1000	580	CN2	3	–590±2v

1) Remove the rear cover of the machine.
2) Apply a digital multi-meter to the connector CN2 pin (3) of the high voltage PWB and the chassis GND.



⚠ : Feb. 9 2004

3) Go through the modes specified in Simulation 8-2.



```
SIMULATION 8-2
MAIN GRID SETTING. SELECT 1-6, AND PRESS START.
1.AUTO 580   2.CHARACTER 580                        1
3.MIX 580    4.PHOTO 580
5.PRINTER 580   6.FAX 580
```

```
SIMULATION 8-2
MAIN GRID SETTING. INPUT VALUE, AND PRESS START.
1.AUTO (200-1000)
                                                  580
```

```
SIMULATION 8-2
MAIN GRID SETTING. EXECUTING···.
1.AUTO
                                                  580
```

4) Select the number that corresponds to the adjustment item using the numeric keypad.

5) Press the Start key.

6) Press the start key to have the voltage output for 30 seconds.

   The operation can be stopped with the CUSTOM SETTINGS key.

   If the output voltage is not within the requirement, do the following steps.

7) Enter the adjustment value using the numeric keypad.

8) Press the Start key

   (The adjustment value is put into memory, and the corresponding voltage is output for 30 seconds.)

Repeat steps 7 to 8 until the output requirement is satisfied.

ADJ 1B Adjust the developing bias voltage

This adjustment is needed in the following situations:

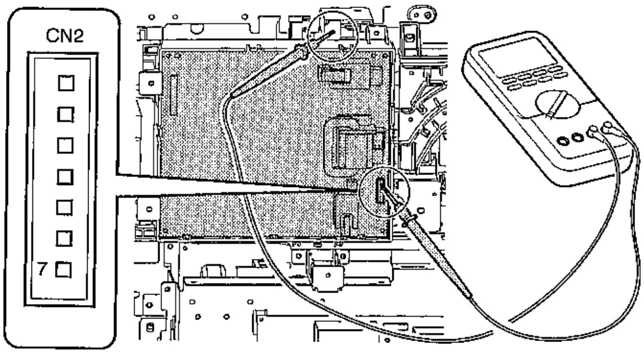
- The high voltage power PWB (MC/DV/TC) has been replaced.
- U2 trouble has occurred.
- The PCU PWB has been replaced.
- The EEPROM of the PCU PWB has been replaced.

(Main charger grid voltage adjustment)

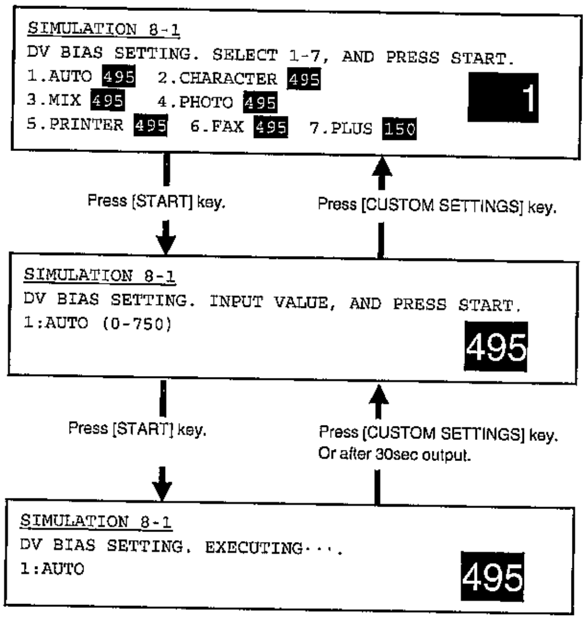
Item/operation mode		Simulation				High voltage power PWB (MC/DV/TC)		
				Setting range	Default	Connector	Pin #	Actual voltage
Copy	Auto mode	8-1	AUTO	0 – 750	495	CN2	7	–500±5v
	Text mode		CHARACTER	0 – 750	495	CN2	7	–500±5v
	Text/photo mode		MIX	0 – 750	495	CN2	7	–500±5v
	Photo mode		PHOTO	0 – 750	495	CN2	7	–500±5v
Printer	All modes		PRINTER	0 – 750	495	CN2	7	–500±5v
FAX	All modes		FAX	0 – 750	495	CN2	7	–500±5v
Cleaning mode			PLUS	0 – 250	150	CN2	7	+150±5v

1) Remove the rear cover of the machine.

2) Apply a digital multi-meter to the connector CN2 pin (7) of the high voltage PWB and the chassis GND.



3) Go through the modes specified in Simulation 8-1.



```
SIMULATION 8-1
DV BIAS SETTING. SELECT 1-7, AND PRESS START.
1.AUTO 495   2.CHARACTER 495                        1
3.MIX 495    4.PHOTO 495
5.PRINTER 495   6.FAX 495   7.PLUS 150
```

```
SIMULATION 8-1
DV BIAS SETTING. INPUT VALUE, AND PRESS START.
1:AUTO (0-750)
                                                  495
```

```
SIMULATION 8-1
DV BIAS SETTING. EXECUTING···.
1:AUTO
                                                  495
```

⚠: Feb. 9 2004

4) Select the number that corresponds to the adjustment item using the numeric keypad.
5) Press the Start key.
6) Press the start key to have the voltage output for 30 seconds.
   The operation can be stopped with the CUSTOM SETTINGS key.
   If the output voltage is not within the requirement, do the following steps.
7) Enter the adjustment value using the numeric keypad.
8) Press the Start key
   (The adjustment value is put into memory, and the corresponding voltage is output for 30 seconds.)

Repeat steps 7 to 8 until the output requirement is satisfied.

ADJ 1C Adjust the transfer voltage

(Transfer voltage adjustment)

Item/operation mode	Simulation		Setting range	Default	Adjustment voltage (monitor voltage)	Connector	Pin #	Actual voltage/actual current	
⚠ Front print	8-6	FRONT	0 – 800	350	–	–	–	35±1.0μA (1.0 – 1.5Kv)	High voltage power PWB (MC/DV/TC)
				400*				40±1.0μA (2.0 – 2.5Kv)*	
⚠ Back print		BACK	0 – 800	350	–	–	–	35±1.0μA (1.0 – 1.5Kv)	
				400*				40±1.0μA (2.0 – 2.5Kv)*	
Transfer belt (cleaning)	8-17	SHF FRONT	0 – 600	450	–	–	–	AC4.5Kv (p-p)	
		SHF BACK	0 – 600	450	–	–	–	AC4.5Kv (p-p)	
⚠		THV-	0 – 75	10	DC -100±10v	CN2	1	DC -100±10v / AC4.5Kv (p-p)	
Transfer roller (cleaning)	8-18	CRHV PLUS	0 – 250	200	+2.0±0.1v	–	Check pin	+2000±100v	High voltage power PWB (TC cleaning)
Transfer roller (print)		CRHV MINUS	0 – 250	200	–2.0±0.1v	–	Check pin	–2000±100v	

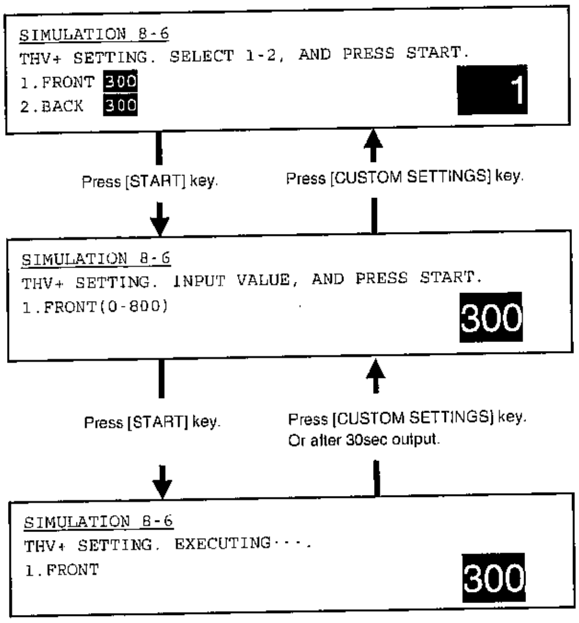
⚠ *: AR-M700N/U

Transfer voltage adjustment (print operation mode)

This adjustment is needed in the following situations:

- The high voltage power PWB (MC/DV/TC) has been replaced.
- U2 trouble has occurred.
- The PCU PWB has been replaced.
- The EEPROM of the PCU PWB has been replaced.

1) Go through the modes specified in Simulation 8-6.



```
SIMULATION 8-6
THV+ SETTING. SELECT 1-2, AND PRESS START.
1.FRONT 300
2.BACK  300                                   1
```

```
SIMULATION 8-6
THV+ SETTING. INPUT VALUE, AND PRESS START.
1.FRONT(0-800)                              300
```

```
SIMULATION 8-6
THV+ SETTING. EXECUTING···.
1.FRONT                                     300
```

2) Select the number that corresponds to the adjustment item (FRONT/BACK) using the numeric keypad.
3) Press the Start key
4) Enter the adjustment value (default) using the numeric keypad.
5) Press the Start key
   ⚠ (The adjustment value is put into memory, and the corresponding current is output for 30 seconds.)

The operation can be stopped with the CUSTOM SETTINGS key.

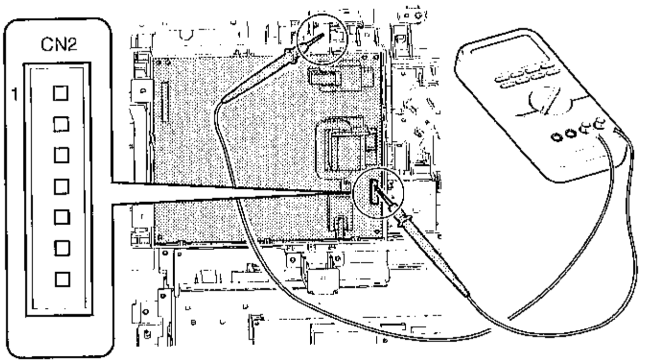
Note: It is not possible to determine the adjusted transfer voltage (print operation mode) (FRONT/BACK). If the voltage seems to be abnormal after setting the default value, therefore, the high voltage PWB (MC/DV/TC) should be replaced.

Transfer voltage adjustment (transfer belt cleaning mode)

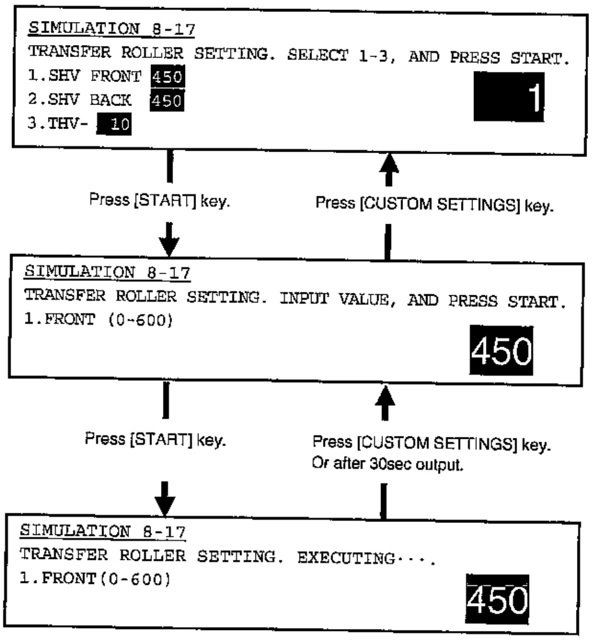
This adjustment is needed in the following situations:

- The high voltage power PWB (MC/DV/TC) has been replaced.
- U2 trouble has occurred.
- The PCU PWB has been replaced.
- The EEPROM of the PCU PWB has been replaced.

1) Remove the rear cover of the machine.
2) Apply a digital multi-meter to the connector CN2 pin (1) of the high voltage PWB and the chassis GND.



3) Go through the modes specified in Simulation 8-17.



```
SIMULATION 8-17
TRANSFER ROLLER SETTING. SELECT 1-3, AND PRESS START.
1.SHV FRONT 450
2.SHV BACK  450                                      1
3.THV- 10
```

```
SIMULATION 8-17
TRANSFER ROLLER SETTING. INPUT VALUE, AND PRESS START.
1.FRONT (0-600)
                                                   450
```

```
SIMULATION 8-17
TRANSFER ROLLER SETTING. EXECUTING····.
1.FRONT(0-600)
                                                   450
```

4) Select the number that corresponds to the adjustment item (SHF FRONT / SHF BACK) using the numeric keypad.
5) Press the Start key.
6) Set each adjustment item to the default value (enter the adjustment value and then press the Start key).

Note: The adjustment items (SHF FRONT / SHF BACK) correspond to the AC component of the 'transfer belt cleaning mode voltage' applied to the transfer roller, but this voltage component cannot be determined. If the voltage seems to be abnormal after setting the default adjustment value, therefore, the high voltage PWB (MC/DV/TC) should be replaced.

7) Select the number that corresponds to cleaning operation mode (THV-) using the numeric keypad.

Note: The adjustment items (THV-) corresponds to the DC component of the 'transfer belt cleaning mode voltage' applied to the transfer roller.

8) Press the Start key.
9) Press the Start key to have the voltage output for 30 seconds.

If the output voltage is not within the requirement, do the following steps.

The operation can be stopped with the CUSTOM SETTINGS key.

10) Enter the adjustment value using the numeric keypad.
11) Press the Start key.
(The adjustment value is put into memory, and the corresponding voltage is output for 30 seconds.)

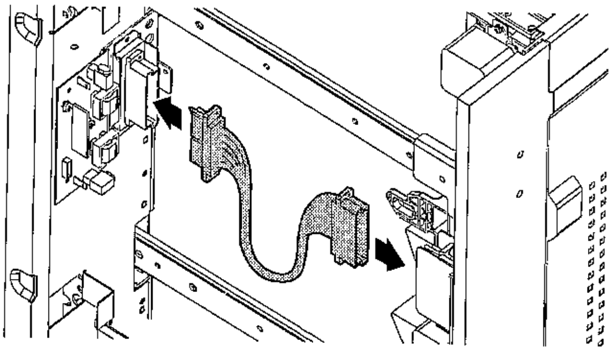
Repeat steps 10 to 11 until the output requirement is satisfied.

Transfer voltage adjustment (transfer roller cleaning/transfer roller print modes)

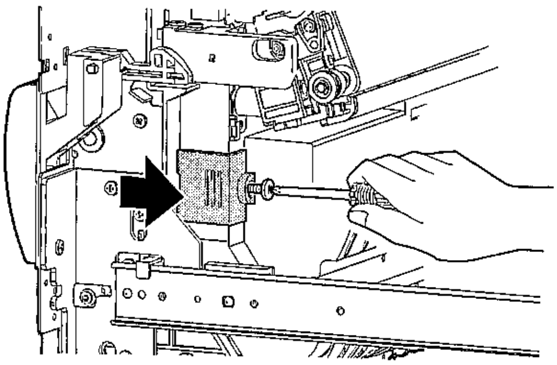
This adjustment is needed in the following situations:

- The high voltage power PWB (TC cleaning) has been replaced.
- U2 trouble has occurred.
- The PCU PWB has been replaced.
- The EEPROM of the PCU PWB has been replaced.

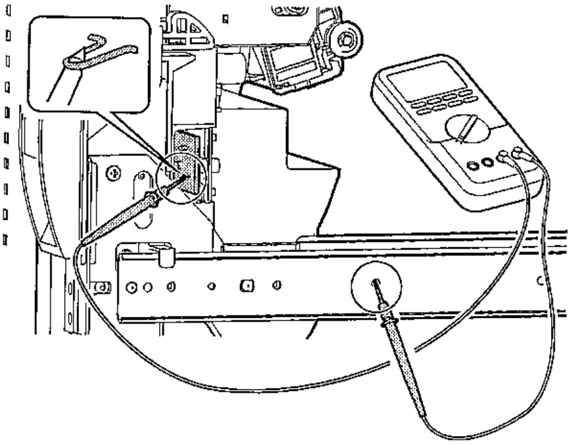
1) Connect the transfer section to the main body side using the transfer extension harness (DHAi-3629FCZZ).



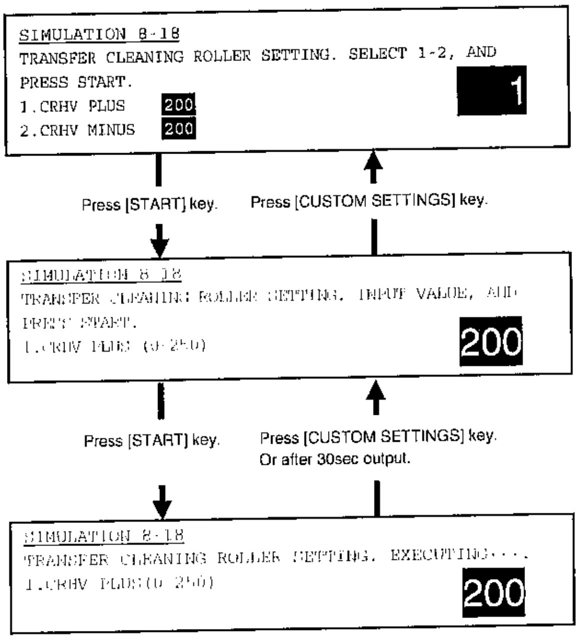
2) Remove the front frame cover of the duplex section, and remove the rear frame cover of the transfer section.



3) Apply a digital multi-meter to the check pin of the high voltage PWB (TC cleaning) and the chassis GND.



4) Go through the modes specified in Simulation 8-18.



```
SIMULATION 8-18
TRANSFER CLEANING ROLLER SETTING. SELECT 1-2, AND
PRESS START.
1.CRHV PLUS    200
2.CRHV MINUS   200                         1
```

```
SIMULATION 8-18
TRANSFER CLEANING ROLLER SETTING. INPUT VALUE, AND
PRESS START.
1.CRHV PLUS (0-250)                        200
```

```
SIMULATION 8-18
TRANSFER CLEANING ROLLER SETTING. EXECUTING···.
1.CRHV PLUS(0-250)                         200
```

5) Select the number that corresponds to the adjustment item (CRHV PLUS / CRHV MINUS) using the numeric keypad.
6) Press the Start key
7) Press the Start key to have the voltage output for 30 seconds.
   The operation can be stopped with the CUSTOM SETTINGS key.

If the output voltage is not within the requirement, do the following steps.

8) Enter the adjustment value using the numeric keypad.
9) Press the Start key.
   (The adjustment value is put into memory, and the corresponding voltage is output for 30 seconds.)

Repeat steps 8 to 9 until the output requirement is satisfied.

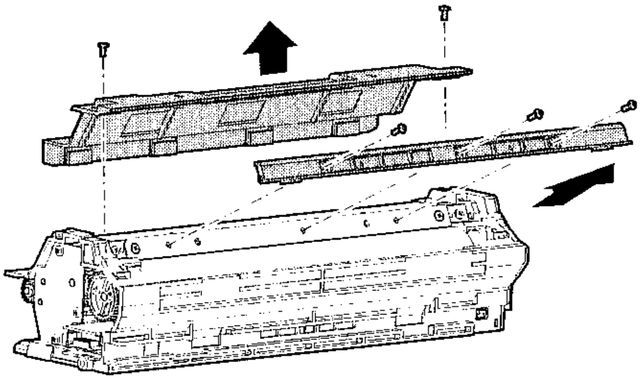
ADJ 2 Adjusting the developing unit

ADJ 2A Adjust the developing doctor gap

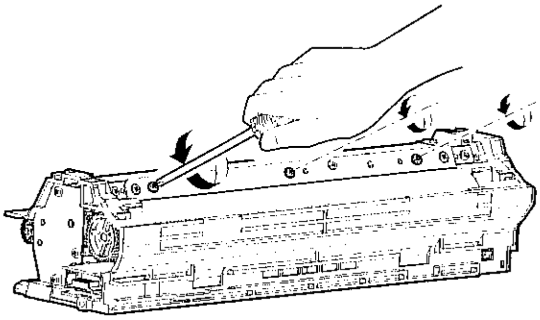
This adjustment is needed in the following situations:

- The developing unit has been disassembled.
- The print density is low.
- The toner is excessively dispersed.

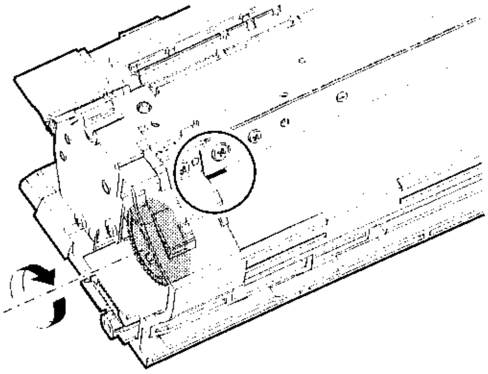
1) Remove the developing unit of the machine.
2) Remove the developing unit cover and blade cover.



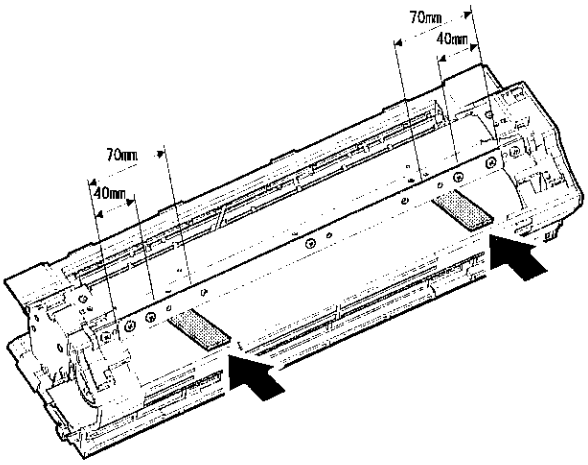
3) Loosen the DV doctor fixing screws.



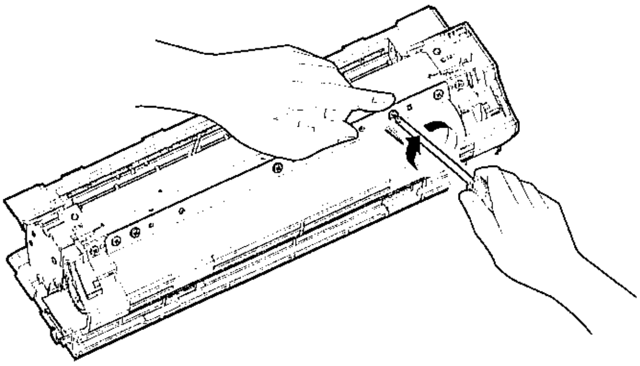
4) Manually turn the DV roller to align the marking on the DV roller surface with the DV doctor position.



5) Insert a 0.525mm clearance gauge in between the DV roller and DV doctor so that the gauge is positioned at a distance of 40 mm to 70 mm from the DV doctor end face.

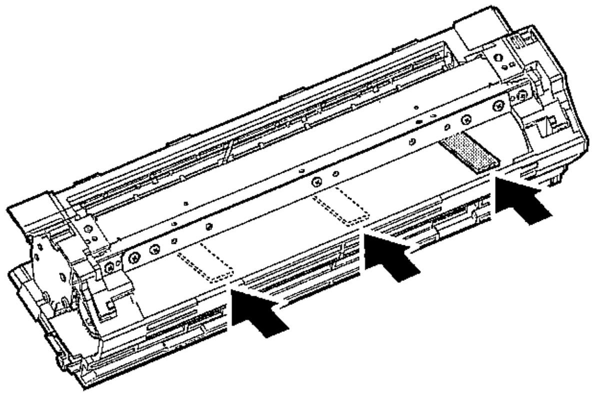


6) Tighten the DV doctor fixing screws while pressing the DV doctor in the arrow direction.
   (This should be done for both front and rear frames.)



⚠ : Feb. 9 2004

7) On both sides of the DV doctor and at its center, make sure that the DV doctor gap is 0.525 ±0.03.



Note: When inserting a clearance gauge, take care not to damage the DV doctor or MG roller.

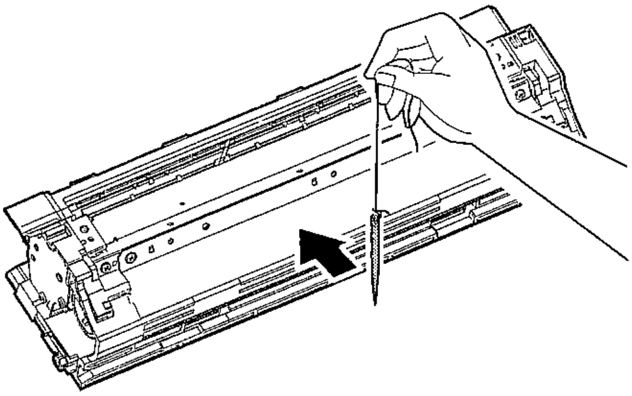
Repeat steps 2 to 6 until the DV doctor gap meets the requirement.

ADJ 2B Adjust the developing roller main pole

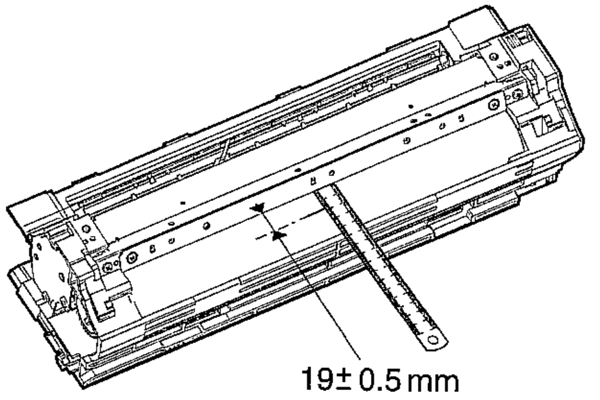
This adjustment is needed in the following situations:

- The developing unit has been disassembled.
- The print density is low.
- The toner is excessively dispersed.

1) Remove the dveloping unit.
2) Remove the developing unit cover and blade cover, and then place the developing unit on a level surface.
3) Attach a piece of string to a sewing needle or pin.
4) With the string in hand, bring the needle closer to the DV roller while keeping the needle parallel with the roller. (Do not use a clip, which does not accurately indicate the position.)

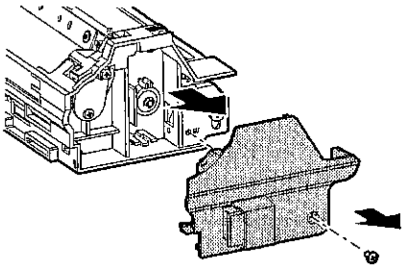


5) Keeping the needle 2 to 3 mm off the DV roller surface, mark the DV roller surface at an extension of the needle tip. (Do not let the needle tip contact the DV roller.)
6) Measure the distance between the marking on the DV roller and leading edge of the DV doctor, and make sure that it is 19±0.5mm.

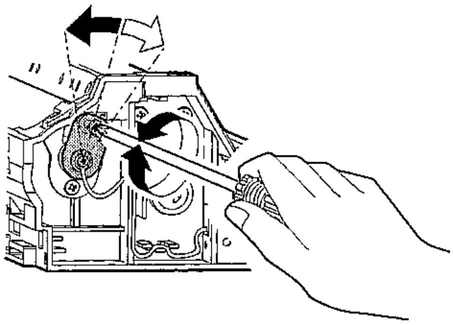


If this requirement is not met, do the following steps.

7) Remove the front cover.



8) Loosen the fixing screws of the developing roller main pole adjusting plate, and make adjustments by moving the adjusting plate in the arrow direction.



Repeat steps 3 to 6 until the developing roller main pole meets the positional requirement.

ADJ 3 Adjusting image distortions

ADJ 3A Adjust print image distortions (LSU parallelism adjustment)

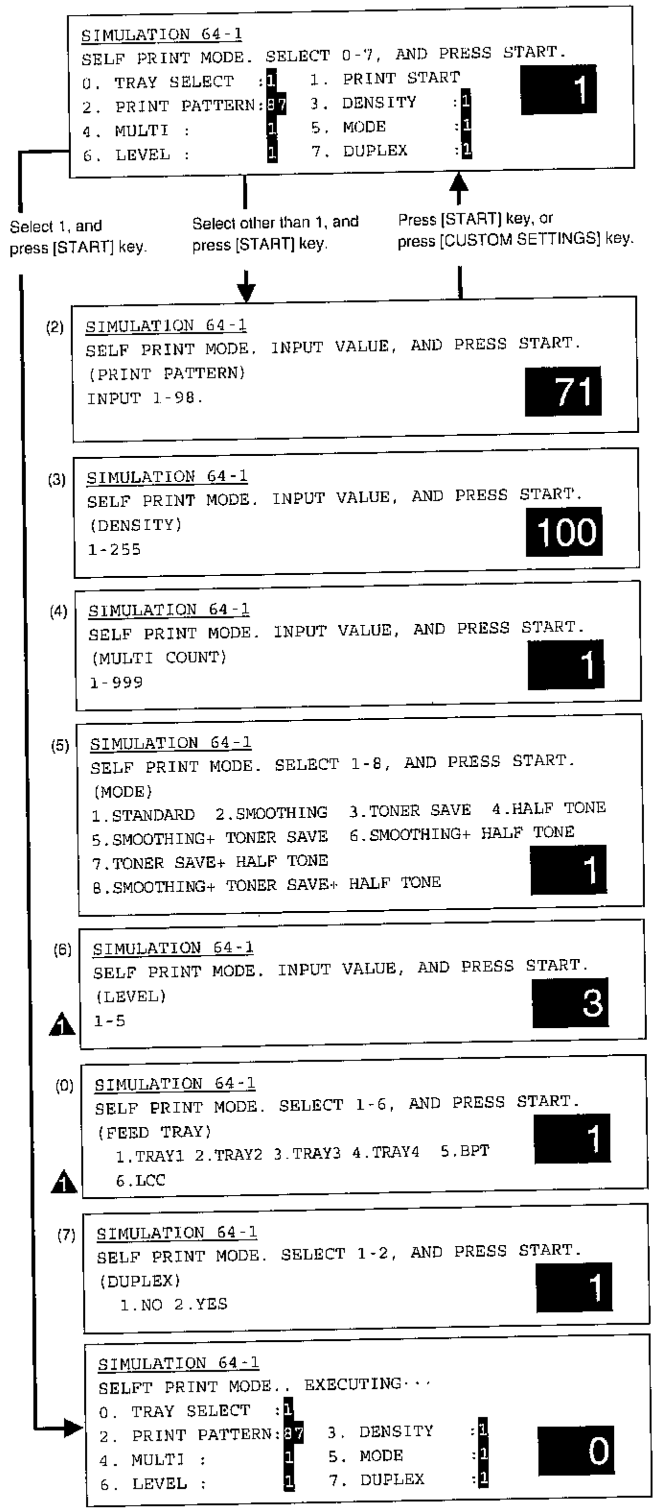
This adjustment is needed in the following situations:

- The LSU has been replaced or removed.
- Print images are distorted.

This adjustment should be followed by:

⚠ ADJ 7 / ADJ 7A: Adjust the print image off-center (print engine section)

1) Set A4 (11 x 8.5) paper to Tray 1.
2) Go through the modes specified in Simulation 64-1.


Select 1, and press [START] key.
Select other than 1, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
(2)
(3)
(4)
(5)
(6)
(0)
(7)

```
SIMULATION 64-1
SELF PRINT MODE. SELECT 0-7, AND PRESS START.
0. TRAY SELECT   :1   1. PRINT START
2. PRINT PATTERN:87   3. DENSITY   :1         1
4. MULTI  :      1    5. MODE      :1
6. LEVEL  :      1    7. DUPLEX    :1
```

(2)

```
SIMULATION 64-1
SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(PRINT PATTERN)
INPUT 1-98.                                  71
```

(3)

```
SIMULATION 64-1
SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(DENSITY)
1-255                                       100
```

(4)

```
SIMULATION 64-1
SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(MULTI COUNT)
1-999                                         1
```

(5)

```
SIMULATION 64-1
SELF PRINT MODE. SELECT 1-8, AND PRESS START.
(MODE)
1.STANDARD  2.SMOOTHING  3.TONER SAVE  4.HALF TONE
5.SMOOTHING+ TONER SAVE  6.SMOOTHING+ HALF TONE
7.TONER SAVE+ HALF TONE
8.SMOOTHING+ TONER SAVE+ HALF TONE            1
```

(6)

```
SIMULATION 64-1
SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(LEVEL)
1-5                                           3
```

(0)

```
SIMULATION 64-1
SELF PRINT MODE. SELECT 1-6, AND PRESS START.
(FEED TRAY)
  1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4  5.BPT      1
  6.LCC
```

(7)

```
SIMULATION 64-1
SELF PRINT MODE. SELECT 1-2, AND PRESS START.
(DUPLEX)
  1.NO 2.YES                                  1
```

```
SIMULATION 64-1
SELFT PRINT MODE.. EXECUTING···
0. TRAY SELECT   :1
2. PRINT PATTERN:87   3. DENSITY   :1
4. MULTI  :      1    5. MODE      :1         0
6. LEVEL  :      1    7. DUPLEX    :1
```

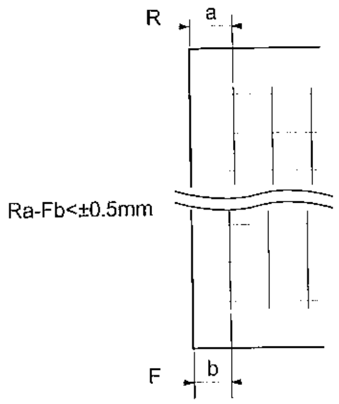
3) Select PRINT PATTERN using the numeric keypad.
4) Select print pattern 71 (grid pattern).
5) Press the Start key
6) Select PRINT START using the numeric keypad.
7) Press the Start key
8) Check the printed grid pattern for distortions.

Check with one of the following methods.

[Check Method 1]

Compare the front frame side and rear frame side of the printed paper in terms of the distance between the outer end of the grid pattern image and the edge of the paper.

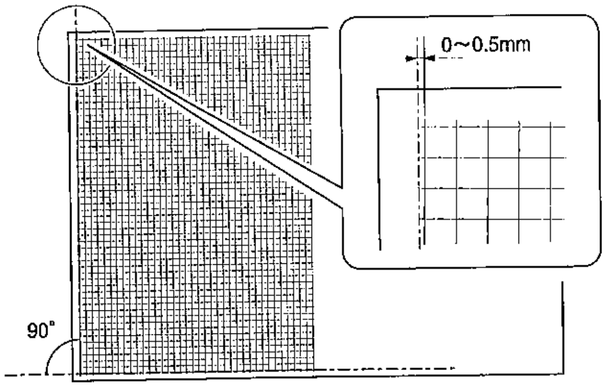
No adjustment is needed if the difference between these dimensions is within 0.5 mm.



[Check Method 2]

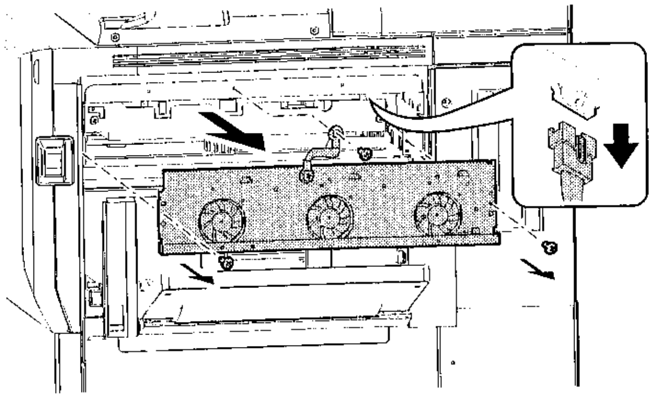
Check the printed grid pattern for distortions.

If the right-angle level of the traverse print line is 0.5mm or less with respect to the longitudinal print line of paper, no adjustment is needed.

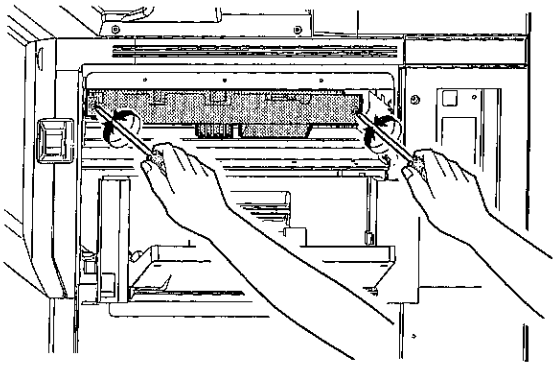


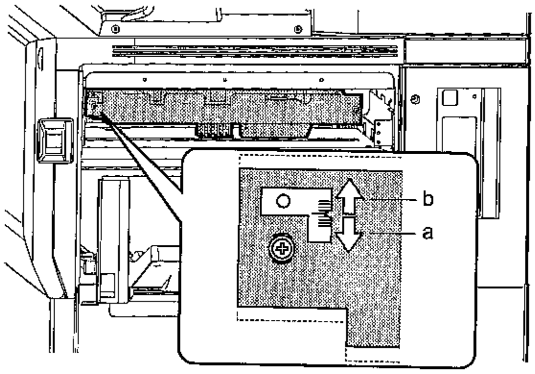
Carry out the following work if the situation is unsatisfactory.

9) Draw out the manual paper feed tray, and remove the front frame side, side cover, fan cover cabinet, and fan unit.
10) Remove the fan unit.



11) Loosen the LSU fixing screws, and change the LSU fixing angle.
    - If the vertical line image is inclined to the left with respect to the front frame side, move the LSU fixing plate in arrow direction (a).
    - If the vertical line image is inclined to the right with respect to the front frame side, move the LSU fixing plate in arrow direction (b).





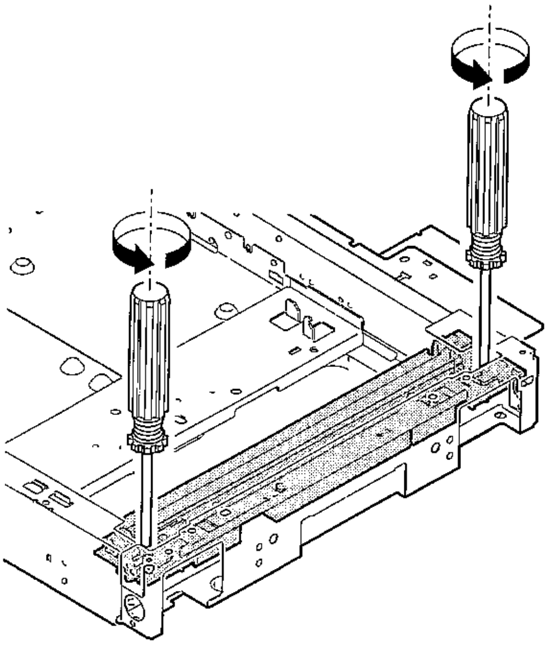
1 Repeat steps 5 to 11 until an acceptable result is obtained.

ADJ 3B Adjust the scanner (reading) unit parallelism

This adjustment is needed in the following situations:

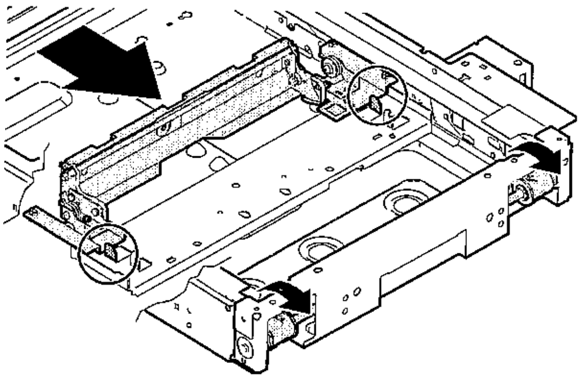
- The scanner (reading) section has been disassembled.
- Scanned images are distorted.

1) Loosen the fixing screws for Scanner Unit A and scanner drive wire to release the scanner unit from the drive wire.



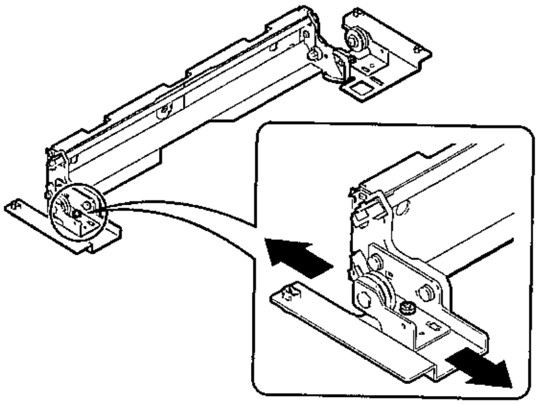
2) Manually turn the scanner drive pulley, and move Scanner Unit B until contact with the two stoppers on the CCD mounting plate.

   If Scanner Unit B makes contact with the two stoppers on the CCD mounting plate simultaneously, the parallelism of Scanner Unit B is proper.



If this requirement is not met, do the following steps.

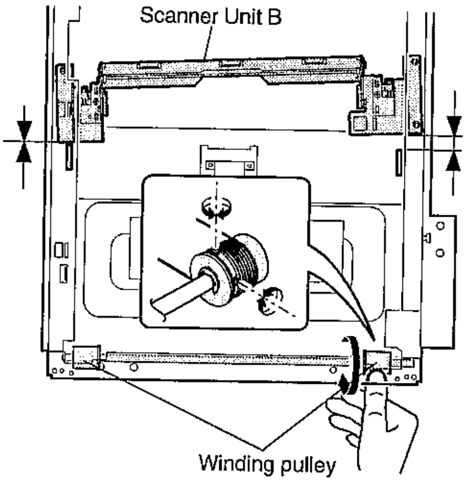
3) Loosen the pulley angle fixing screw on either the front or rear frame side of Scanner Unit B.



4) Adjust the pulley angle position on Scanner Unit B so that the scanner unit makes contact with both of the two stoppers on the CCD mounting plate at the same time.
5) Fix the pulley angle on Scanner Unit B.

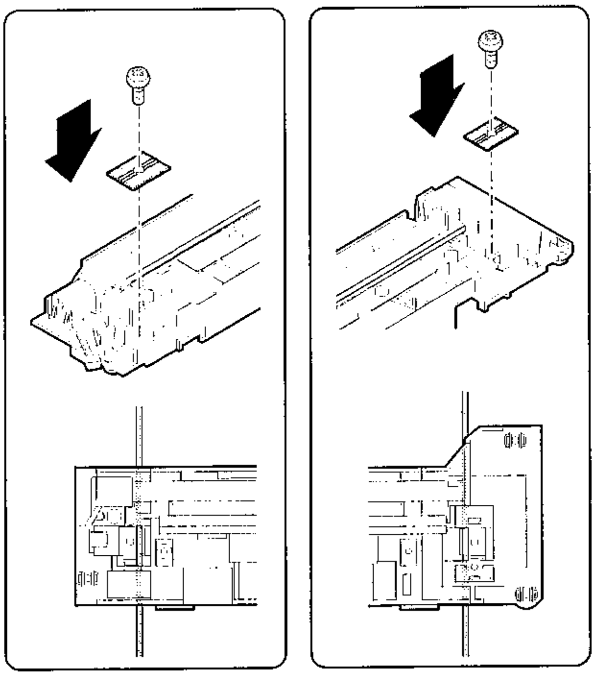
If the above steps fail to provide an acceptable result, then do the following steps.

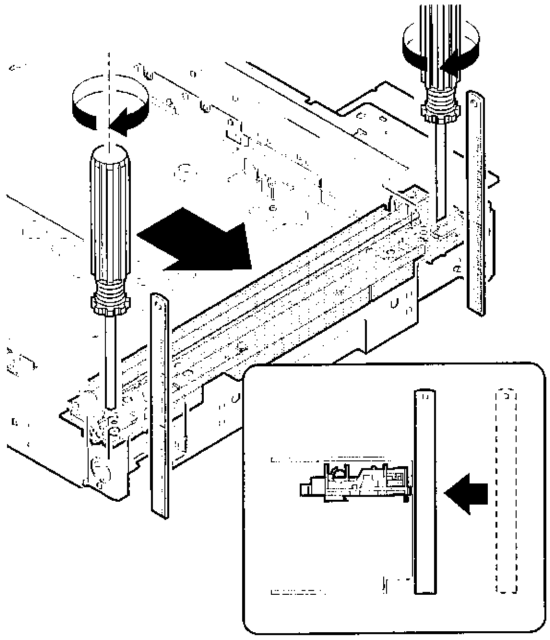
6) Loosen the fixing screw of the scanner unit drive pulley that is not in contact.
7) Manually turning the scanner unit drive pulley, move Scanner Unit B until it comes into contact with the two stoppers on the CCD mounting plate.



8) Without moving the scanner unit drive shaft, manually turn the scanner unit drive pulley so that Scanner Unit B makes contact with both of the two stoppers on the CCD mounting plate at the same time. (Change the positional relationship between the scanner unit drive pulley and the drive shaft.)

9) With Scanner Unit B in contact with both of the two stoppers on the CCD mounting plate at the same time, align the end face of Scanner Unit A with the right-hand side end face of the frame, and fix Scanner Unit A with the screws.



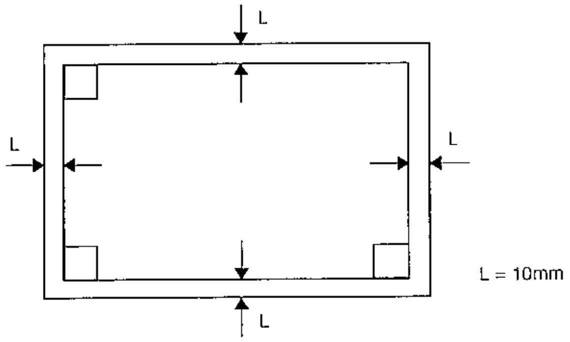


ADJ 3C Adjust scanned image distortions in the sub-scanning direction

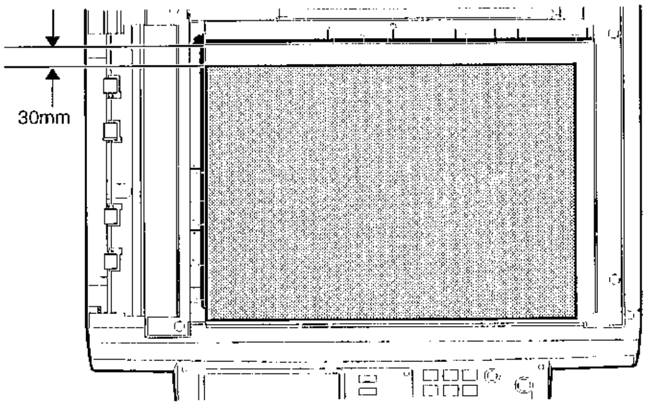
This adjustment is needed in the following situations:

- The scanner (reading) section has been disassembled.
- Scanned images are distorted.

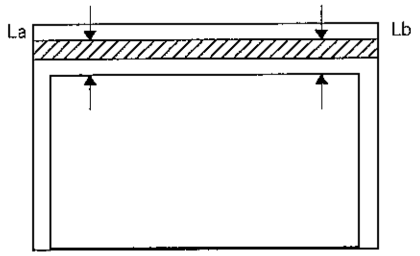
1) Make a test chart on A3 (11" x 17") paper as shown below. (Draw a rectangular with four right angles.)



2) Set the test chart made in step 1 on the document table (about 30 mm in front of the document standard setting position), and make a copy on A3 (11" x 7") paper with the SPF unit open.

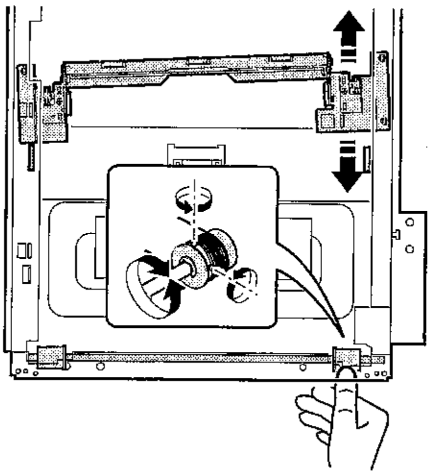


3) Check for distortions in the sub scanning direction.
If La = Lb, there is no distortion.



If there is some distortion in the sub scanning direction, do the following steps.

4) Loosen either of two fixing screws of the scanner unit drive pulley. (Either one on the front or the rear side will do.)



5) With the scanner unit drive shaft kept stationary, manually turn the scanner unit drive pulley to change the parallelism of Scanner Units A and B. (Change the positional relationship between the scanner unit drive pulley and the drive shaft.)

6) Tighten the scanner unit drive pulley fixing screw.

Repeat steps 2 to 6 until an acceptable result is obtained.

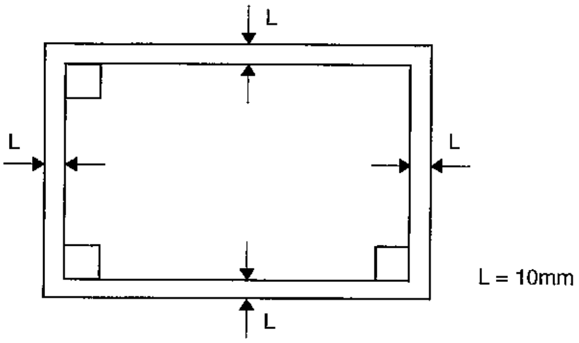
If the above steps fail to eliminate distortions in the sub scanning direction, do the steps described in "ADJ 6E: Adjust scanned image distortions in the main scanning direction - 2."

ADJ 3D Adjust scanned image distortions in the main scanning direction - 1

This adjustment is needed in the following situations:

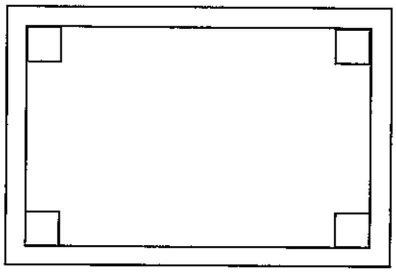
- The scanner (reading) section has been disassembled.
- Scanned images are distorted.

1) Make a test chart on A3 (11" x 17") paper as shown below. (Draw a rectangular with four right angles.)



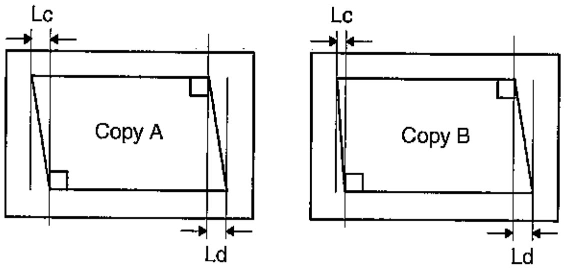
2) Set the test chart made in step 1 on the document table, and make a copy on A3 (11" x 17") paper.

3) Check for distortions in the main scanning direction.
If the four angles of the rectangle on the copy are right angles, there is no distortion and therefore no further steps are needed.



If there is some distortion in the main scanning direction, do the following steps.

4) Check the difference (distortion balance) between left-hand and right-hand side images distortions.



There is no difference between the distortion on the right and that on the left.
Lc = Ld

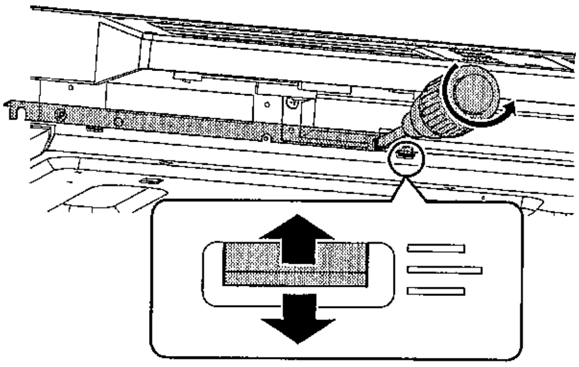
There is some difference between the distortion on the right and that on the left.
Lc ≠ Ld

If Lc = Ld, the distortion on the left is equal to that on the right. (The distortions are balanced.)

If the above requirement is satisfied, then do the steps described in "ADJ 3E: Adjust scanned image distortions in the main scanning direction - 2."

If the above requirement is not met, then do the following steps.

5) Change the height balance of the front frame side scanner rail.



- If the paper leading edge is more distorted than the paper trailing edge, then raise the scanner rail right side.
- If the leading edge is less distorted than the paper trailing edge, then lower the scanner rail right side.

6) Set the test chart made in step 1 on the document table, and make a copy on A3 (11" x 17") paper.

7) Check the image distortion balance in the main scanning direction.

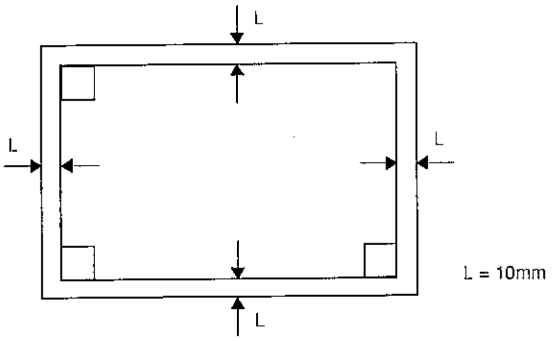
Repeat steps 5 to 7 until the difference in size of image distortion (distortion balance) in the image scanning direction is equal.

ADJ 3E Adjust scanned image distortions in the main scanning direction - 2

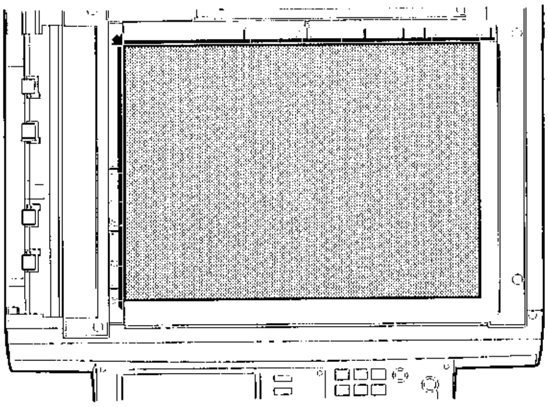
This adjustment is needed in the following situations:

- The scanner (reading) section has been disassembled.
- Scanned images are distorted.

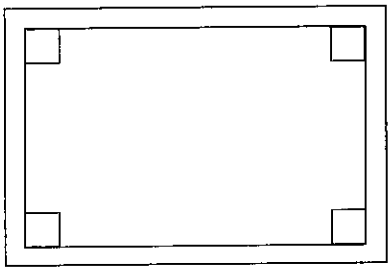
1) Make a test chart on A3 (11" x 17") paper as shown below. (Draw a rectangular with four right angles.)



2) Set the test chart made in step 1 on the document table, and make a copy on A3 (11" x 17") paper.



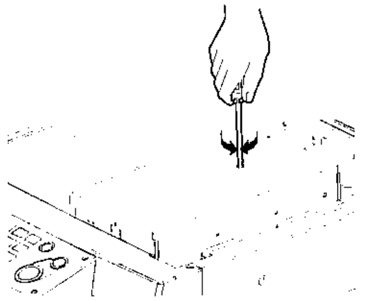
3) Check for distortions in the main scanning direction.
   If the four angles of the rectangle on the copy are right angles, there is no distortion and therefore no further steps are needed.



If there is some distortion in the main scanning direction, do the following steps. These steps assume that there is no or little difference in distortion between the paper's leading and trailing edges.

If there is some difference in distortion between the paper's leading and trailing edges, these steps should be preceded by the adjustment steps described in "ADJ 3D: Adjust scanned image distortions in the main scanning direction - 1", intended to provide almost the same level of distortion on the leading and trailing edges.

4) Remove the document table glass, and make adjustments by turning the main scanning direction image distortion adjusting screw.



- If the rear frame side image is shifted toward the paper's leading edge, then turn the adjusting screw clockwise.
- If the front frame side image is shifted toward the paper's leading edge, then turn the adjusting screw counterclockwise.

Repeat steps 2 to 4 until an acceptable result is obtained.

It changes approx. 0.5mm by 90 degrees rotation.

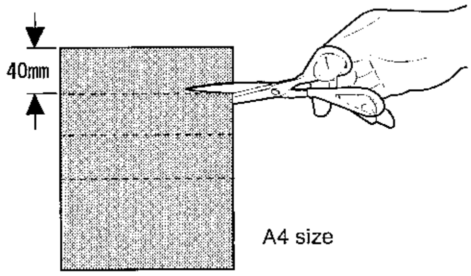
ADJ 4 Adjusting the SPF parallelism

ADJ 4A Adjust SPF levelness

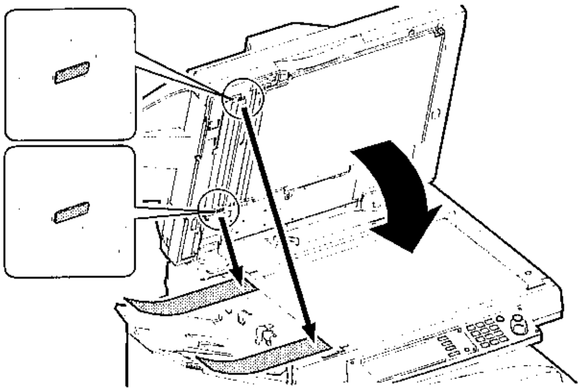
This adjustment is needed in the following situations:

- The SPF section has been disassembled.
- The SPF unit has been replaced.

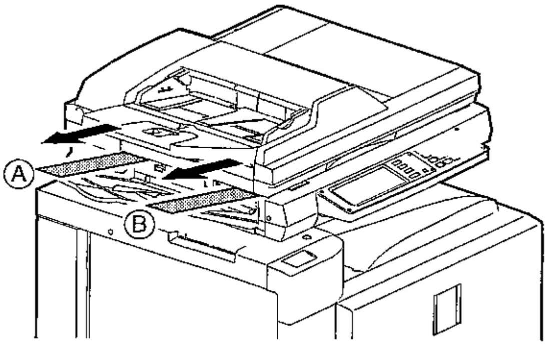
1) Create two check sheets for SPF levelness adjustment by cutting copy paper as illustrated below:



2) Insert each of the two check sheets in between the CIS guide boss and the glass for SPF mode on each of the front and rear frame sides, and then close the SPF unit.

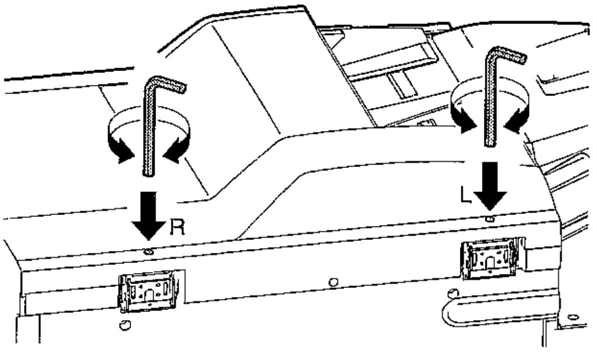


3) Gently pulling out each check sheet for SPF levelness adjustment, make sure that no gap is felt between the CIS guide boss and the glass for SPF mode for each of the front and rear frame sides.



If the above requirement is not met, do step 4.

4) Turn the height adjusting screw on the left side of the SPF rear frame to adjust the fore/aft levelness between the SPF frames.



If the front frame side is higher (i.e. there is a gap in B) : turn the height adjusting screw L on the left side of the SPF rear frame in the clockwise direction.

If the rear frame side is higher (i.e. there is a gap in A) : turn the height adjusting screw L on the left side of the SPF rear frame in the counterclockwise direction.

Repeat steps 2 to 4 until an acceptable result is obtained.

⚠ Note: If the above procedure will not allow an adjustment, turn the adjustment screw R on the rear frame of the SPF to perform an adjustment.

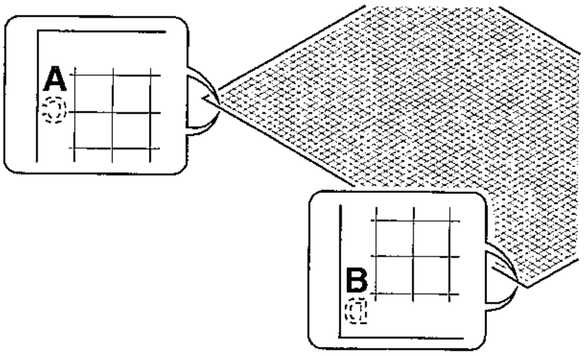
ADJ 4B Adjust SPF skews

This adjustment is needed in the following situations:

- The SPF section has been disassembled.
- The SPF unit has been replaced.
- The SPF unit generates skewed scanned images.

1) Create an adjustment chart by printing in duplex mode the self-print pattern (grid pattern) specified in Simulation 64-1.

Make sure that the print grid pattern is almost in parallel with the paper edges, and apply position marks 'A', 'B', 'C' and 'D' to the leading and trailing edges of the paper for both front and back sides of the paper.



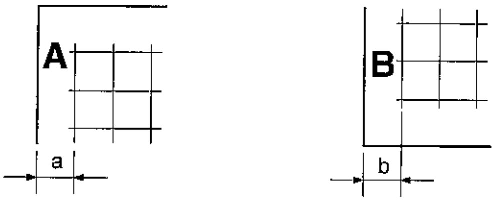
2) Copy the adjustment chart (created in step 1) to A3 (11" x 17") paper in duplex mode, and then check the image for skews (Set in the SPF feed tray so that the mark on the adjustment chart is at the edge).

Check with one of the following methods.

[Check Method 1]

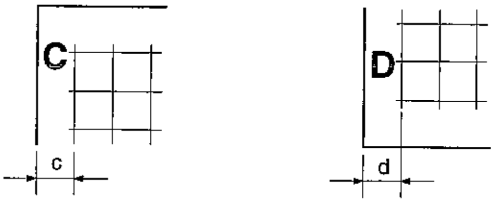
(Front side)

Make sure that the output satisfies the condition: $|a-b| \leq \pm 1$ mm



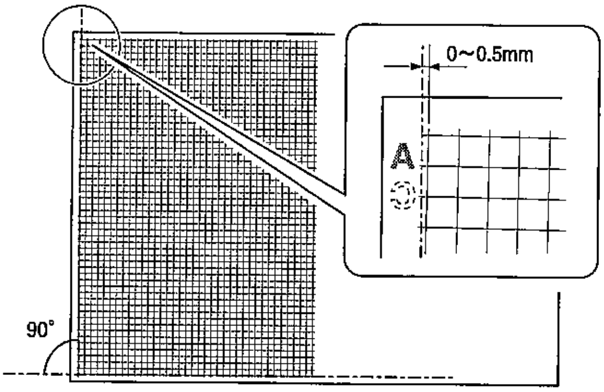
⚠ (Back side)

Make sure that the output satisfies the condition: $|c-d| \leq \pm 1$ mm



[Check Method 2]

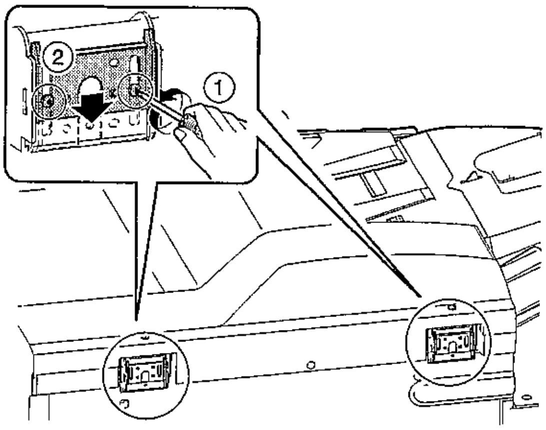
⚠ Check that the squareness of the main scanning direction print line for the longitudinal direction of paper is within 0.5mm.



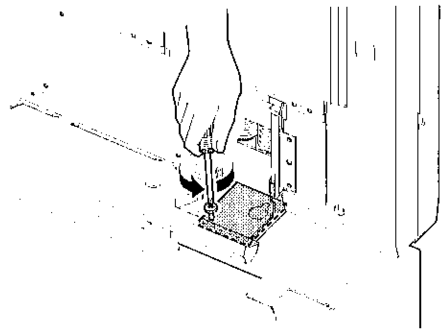
If the above requirement is met for the copied image of the paper's front side but not for the paper's back side, skip to step 4.

If the above requirement is not met for the paper's front side, then do step 3.

3) Loosen the hinge screws and lower the two attachments.

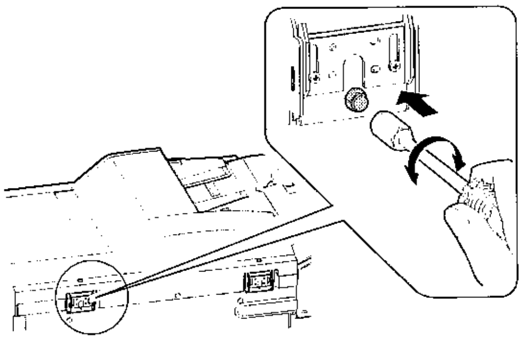


4) Open the SPF and loosen the screw.



5) Adjust by turning the SPF skew adjusting screw on the right side of the SPF rear frame.

Remove the hexagon cap nut of the SPF skew adjusting screw on the right side of the SPF hinge and loosen the fixing nut, then adjust by turning the SPF skew adjusting screw (hexagon screw).



⚠ If a < b, then turn counterclockwise the SPF skew adjusting screw (hexagon screw). (When the main scanning direction print line is shifted to the left)

If a > b, then turn clockwise the SPF skew adjusting screw (hexagon screw). (When the main scanning direction print line is shifted to the right)

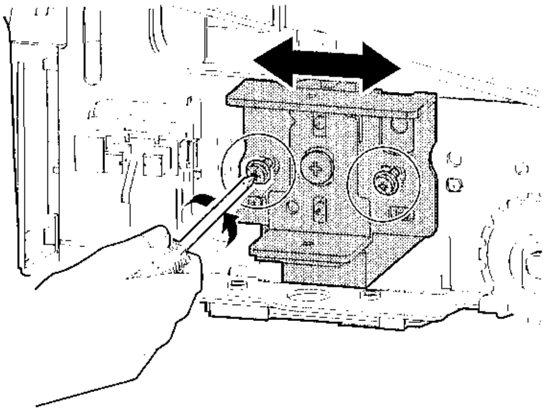
Repeat steps 2 to 5 until an acceptable result is obtained.

[If the copied image of the paper's back side is skewed beyond the acceptable level, do the following steps.]

6) Remove the SPF front cover.

7) Change the front frame side CIS fixing position (angle) to adjust the skew of the copied image of the paper's back side.

This adjustment should be done by loosening the CIS fixing screw on the SPF front side and then moving the fixing plate in the left or right direction.



⚠ If c < d, then shift the CIS fixing plate to the right. (When the main scanning direction print line is shifted to the left)

If c > d, then shift the CIS fixing plate to the left. (When the main scanning direction print line is shifted to the right)

Repeat steps 2 to 7 until an acceptable result is obtained.

ADJ 5 Adjusting the image focus

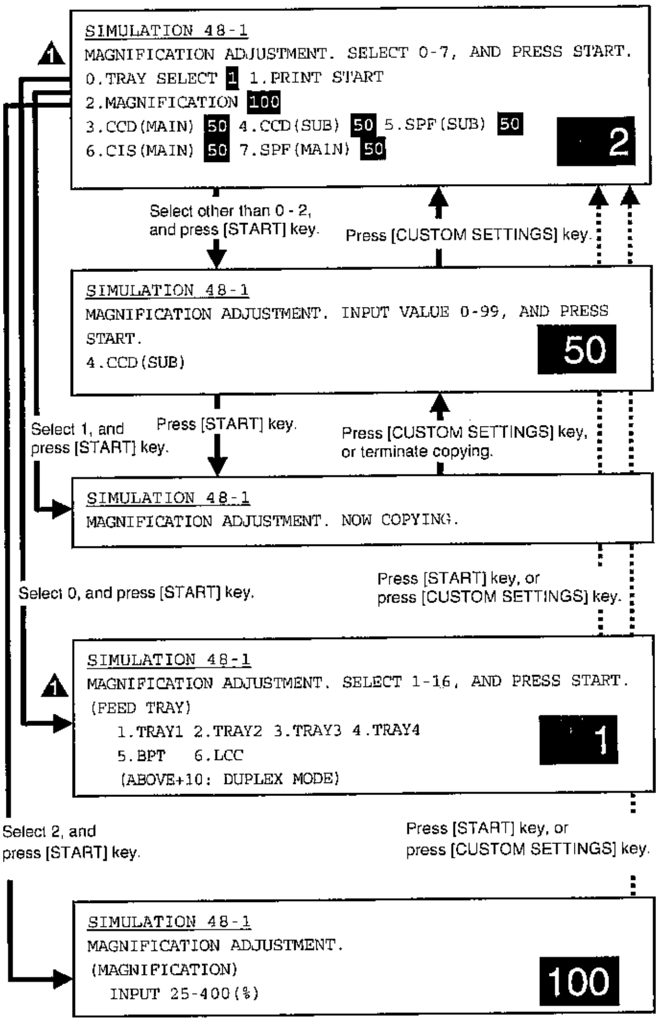
The result of this adjustment will affect all image scan modes (copy, scan, and fax).

ADJ 5A Adjust the image focus in original table mode and SPF front-face mode (CCD)

This adjustment is needed in the following situations:

- The CCD unit has been removed from the machine.
- The CCD unit has been replaced.
- Copied/scanned/faxed images are not correctly focused.

1) Go through the modes specified in Simulation 48-1.



```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. SELECT 0-7, AND PRESS START.
0.TRAY SELECT 1 1.PRINT START
2.MAGNIFICATION 100
3.CCD(MAIN) 50 4.CCD(SUB) 50 5.SPF(SUB) 50
6.CIS(MAIN) 50 7.SPF(MAIN) 50                          2
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. INPUT VALUE 0-99, AND PRESS
START.                                                 50
4.CCD(SUB)
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. NOW COPYING.
```

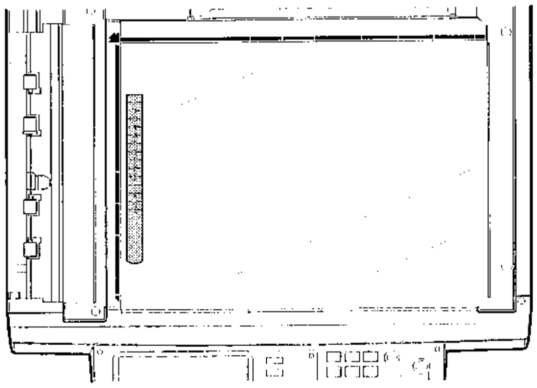
```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. SELECT 1-16, AND PRESS START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4                     1
   5.BPT   6.LCC
  (ABOVE+10: DUPLEX MODE)
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT.
(MAGNIFICATION)
  INPUT 25-400(%)                                      100
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

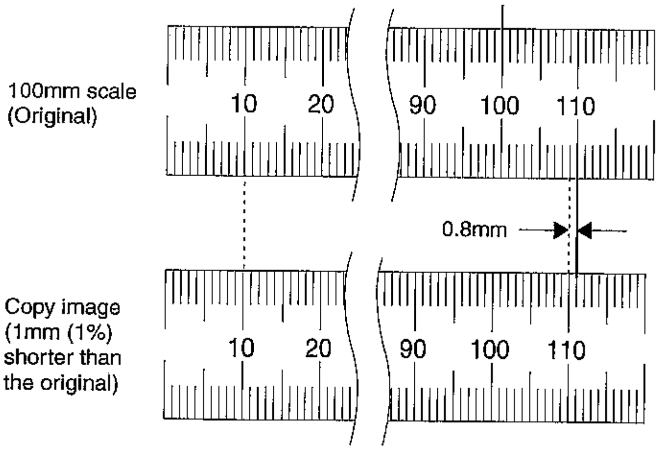
2) Set the adjustment item CCD (MAIN) to 50 (default).

3) Place a scale on the original table as illustrated below.



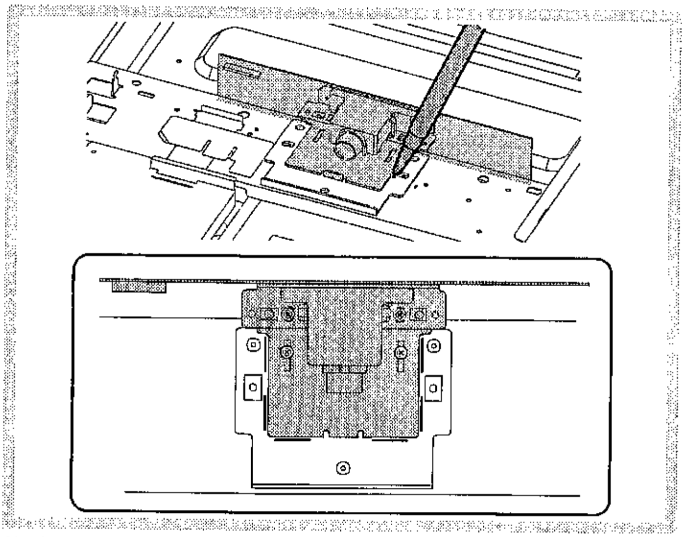
⚠: Feb. 9 2004

4) Make a normal copy on A4 paper.
5) Compare the copied image of the scale and the actual scale length in terms of length.

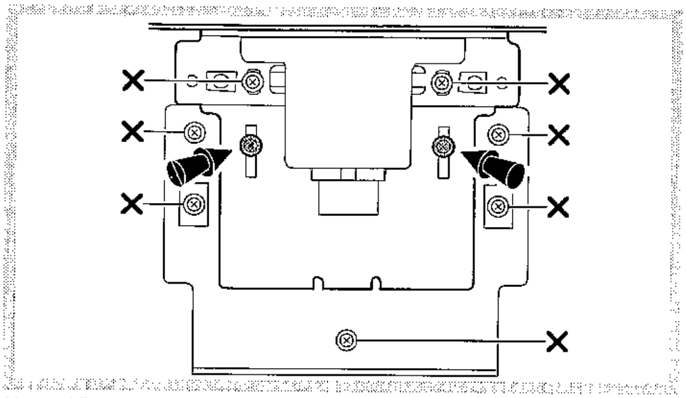


If the copied image of the scale is of almost the same length as the actual scale but is not satisfactorily focused, do the following steps.

6) Remove the table glass and dark box cover.
7) To prevent the CCD unit optical axis from being deviated, mark the CCD unit base as illustrated below.



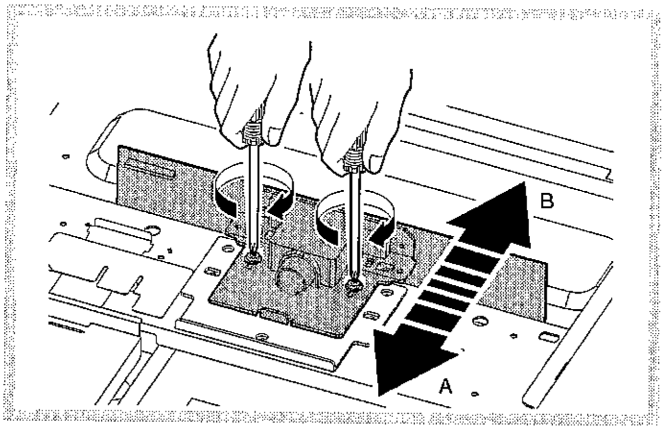
8) Loosen two fixing screws of the CCD unit.



Note: The screws cross-marked in the illustration must not be loosened.

Loosening these screws could possibly change the CCD unit base optical axis. Once the optical axis has been changed, it cannot be corrected through on-site adjustments. Solving such a problem requires the replacement of the entire scanner unit.

9) Slide the CCD unit in the arrow direction (CCD sub-scanning direction) to change its mounted position.



If the copied image is not satisfactorily focused and larger than the original, slide the unit in direction B.

If the copied image is not satisfactorily focused and smaller than the original, slide the unit in direction A.

Note: After adjusting the CCD unit position, fix the CCD unit so that it is in parallel with the marker line added in step 7, referring to the graduations on the front and rear frames sides of the CCD unit base.

Repeat steps 4 to 9 until the copied image of the scale is of almost the same size as the actual scale and the image is satisfactorily focused.

ADJ 5B Adjust the image focus in SPF back-face mode (CIS)

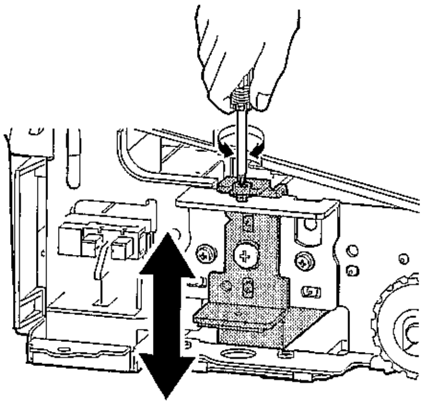
This adjustment is needed in the following situations:

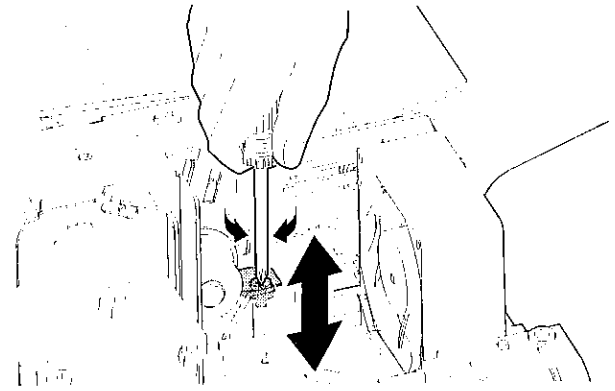
- The CIS unit has been removed.
- The CIS unit has been replaced.
- Copied/scanned/faxed images are not correctly focused.
- The SPF unit has been removed.
- The SPF unit has been replaced.

1) Make a duplex copy in SPF mode.
2) Make sure that the copied image on the back side of the paper is satisfactorily focused.

If the image is not satisfactorily focused, do the following steps.

3) Remove the rear frame and front frame cabinet of the SPF unit.
4) Adjust the focus by turning the CIS focus adjusting screws on the front and rear frame sides, respectively.





Repeat the above adjustments until an acceptable result is obtained.

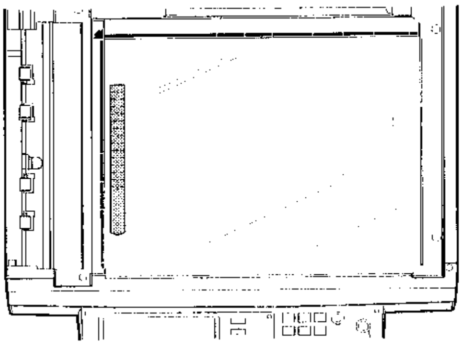
ADJ 6 Adjusting the image magnification

ADJ 6A Adjust the image magnification in the main scanning direction in original table mode (CCD)

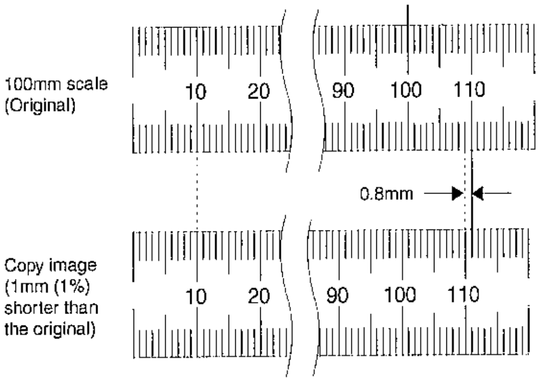
This adjustment is needed in the following situations:

- The CCD unit has been removed from the machine.
- The CCD unit has been replaced.
- Images are not correctly magnified in the main scanning direction.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- U2 trouble has occurred.

3) Place a scale on the original table in parallel with the main scanning direction, as illustrated below.



2) Make a normal copy on A4 paper.
3) Measure the lengths of the copied image of the scale and the actual scale.


100mm scale
(Original)
10
20
90
100
110
0.8mm
Copy image
(1mm (1%)
shorter than
the original)
10
20
90
100
110

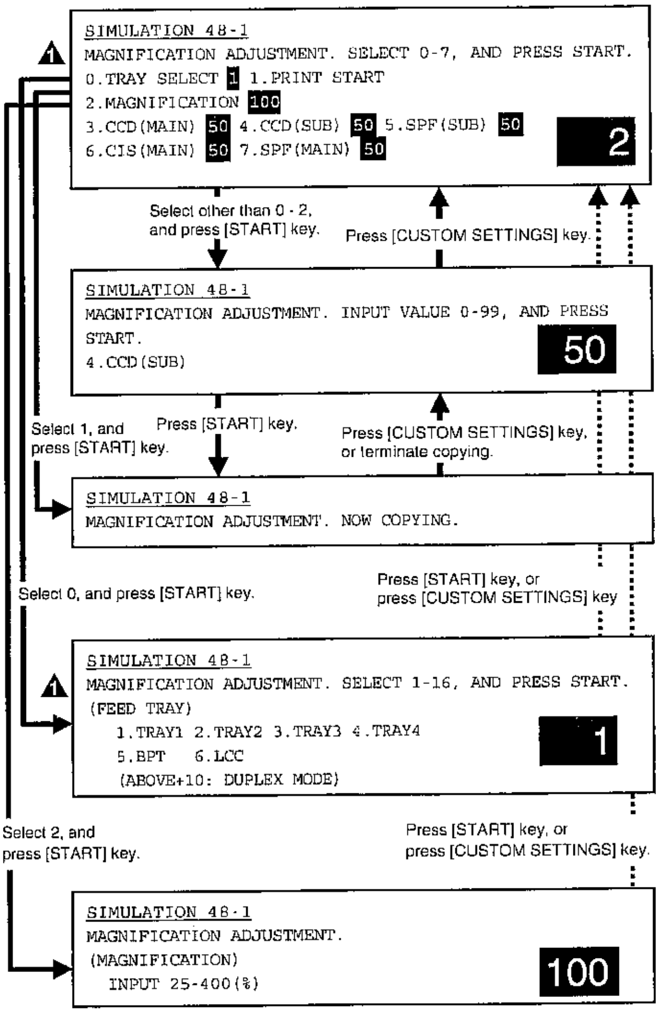
4) Determine the image magnification factor using the following formula:

   Image magnification factor (%) = Copy dimension/original dimension x 100

   Example: Compare the copy and original dimensions by aligning the scale's 10 mm position with the copied image's 10 mm position.

   Image magnification factor (%) = 99 / 100 x 100 = 99

   If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.
5) Go through the modes specified in Simulation 48-1.


Select other than 0 - 2,
and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and
press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key,
or terminate copying.
Select 0, and press [START] key.
Press [START] key, or
press [CUSTOM SETTINGS] key
Select 2, and
press [START] key.
Press [START] key, or
press [CUSTOM SETTINGS] key.

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. SELECT 0-7, AND PRESS START.
0.TRAY SELECT 1 1.PRINT START
2.MAGNIFICATION 100
3.CCD(MAIN) 50 4.CCD(SUB) 50 5.SPF(SUB) 50
6.CIS(MAIN) 50 7.SPF(MAIN) 50                    2
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. INPUT VALUE 0-99, AND PRESS
START.
4.CCD(SUB)                                      50
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. NOW COPYING.
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. SELECT 1-16, AND PRESS START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4               1
   5.BPT   6.LCC
   (ABOVE+10: DUPLEX MODE)
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT.
(MAGNIFICATION)
  INPUT 25-400(%)                              100
```

6) Select the number that corresponds to the adjustment item CCD (MAIN) using the numeric keypad.

   This adjustment item is intended to adjust the image magnification in the main scanning direction in original table mode (CCD).
7) Press the Start key
8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.
9) Press the P or Start key

Pressing the Start key starts copy operation as well as applying the adjustment value.

Repeat steps 2 to 9 until the image magnification factor is satisfactory.

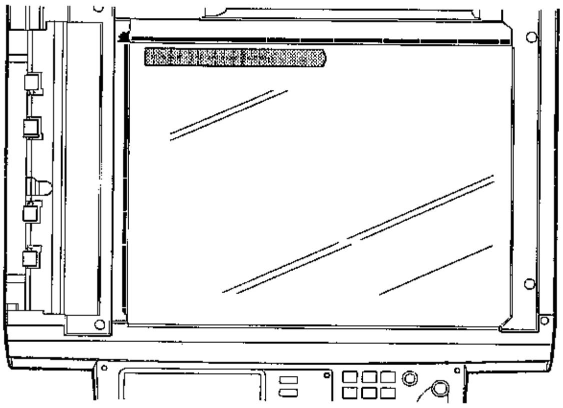
⚠ : Feb. 9 2004

⚠ ADJ 6B Adjust the image magnification in the sub-scanning direction in original table mode (CCD)

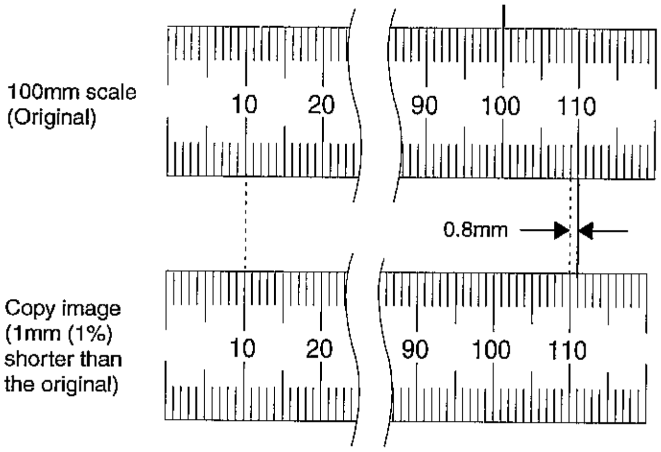
This adjustment is needed in the following situations:

- The CCD unit has been removed from the machine.
- The CCD unit has been replaced.
- Images are not correctly magnified in the sub-scanning direction.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- U2 trouble has occurred.

1) Place a scale on the original table as illustrated below.



2) Make a normal copy on A4 paper.
3) Measure the lengths of the copied image of the scale and the actual scale.


100mm scale
(Original)
10
20
90
100
110
0.8mm
Copy image
(1mm (1%)
shorter than
the original)
10
20
90
100
110

4) Determine the image magnification factor using the following formula:

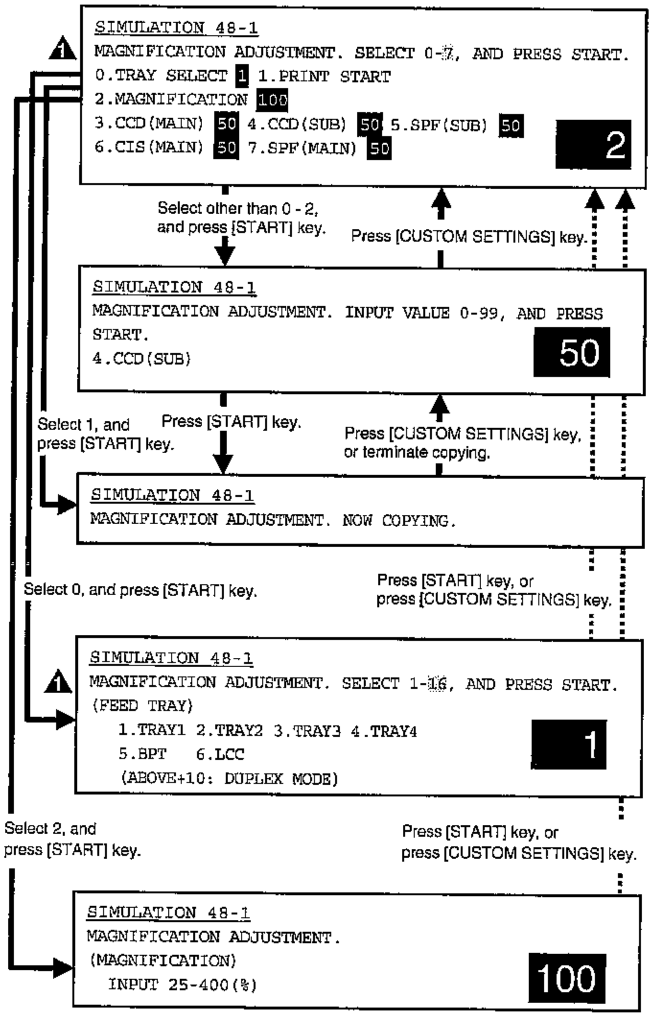
   Image magnification factor (%) = Copy dimension/original dimension x 100

   Example: Compare the copy and original dimensions by aligning the scale's 10 mm position with the copied image's 10 mm position.

   Image magnification factor (%) = 99 / 100 x 100 = 99

   If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.

5) Go through the modes specified in Simulation 48-1.



```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. SELECT 0-7, AND PRESS START.
0.TRAY SELECT 1 1.PRINT START
2.MAGNIFICATION 100
3.CCD(MAIN) 50 4.CCD(SUB) 50 5.SPF(SUB) 50
6.CIS(MAIN) 50 7.SPF(MAIN) 50                    2
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. INPUT VALUE 0-99, AND PRESS
START.
4.CCD(SUB)                                       50
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. NOW COPYING.
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. SELECT 1-16, AND PRESS START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
   5.BPT   6.LCC                                  1
   (ABOVE+10: DUPLEX MODE)
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT.
(MAGNIFICATION)
  INPUT 25-400(%)                               100
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

6) Select the number that corresponds to the adjustment item CCD (SUB) using the numeric keypad.

   This adjustment item is intended to adjust the image magnification in the sub scanning direction in original table mode (CCD).
7) Press the Start key.
8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.
9) Press the P or Start key

Pressing the Start key starts copy operation as well as applying the adjustment value.

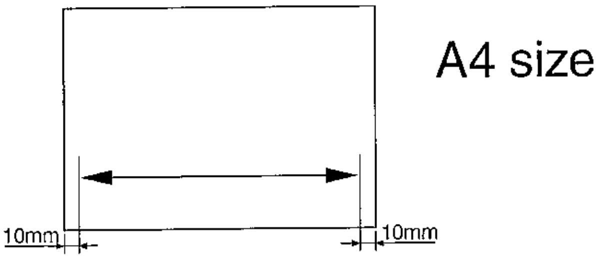
Repeat steps 2 to 9 until the image magnification factor is satisfactory.

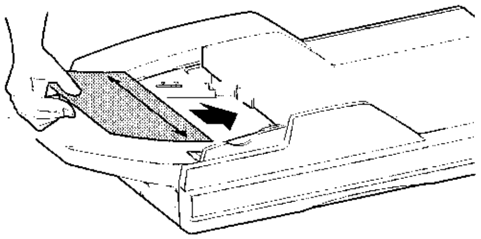
ADJ 6C Adjust the image magnification in the main scanning direction in SPF front-face mode (CCD)

This adjustment is needed in the following situations:

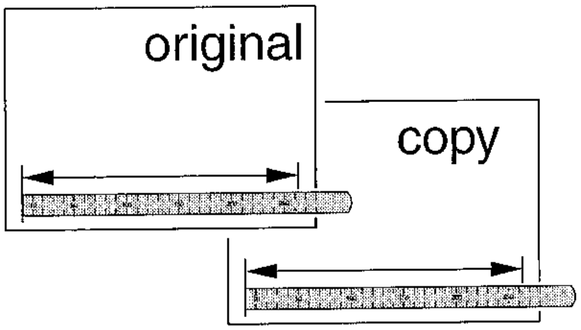
- The CCD unit has been removed from the machine.
- The CCD unit has been replaced.
- Images are not correctly magnified in the main scanning direction.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- U2 trouble has occurred.

1) On the SPF original tray, place such an original as illustrated below.





2) Make a normal copy on A4 paper.
3) Measure the lengths of the copied image and the original image.

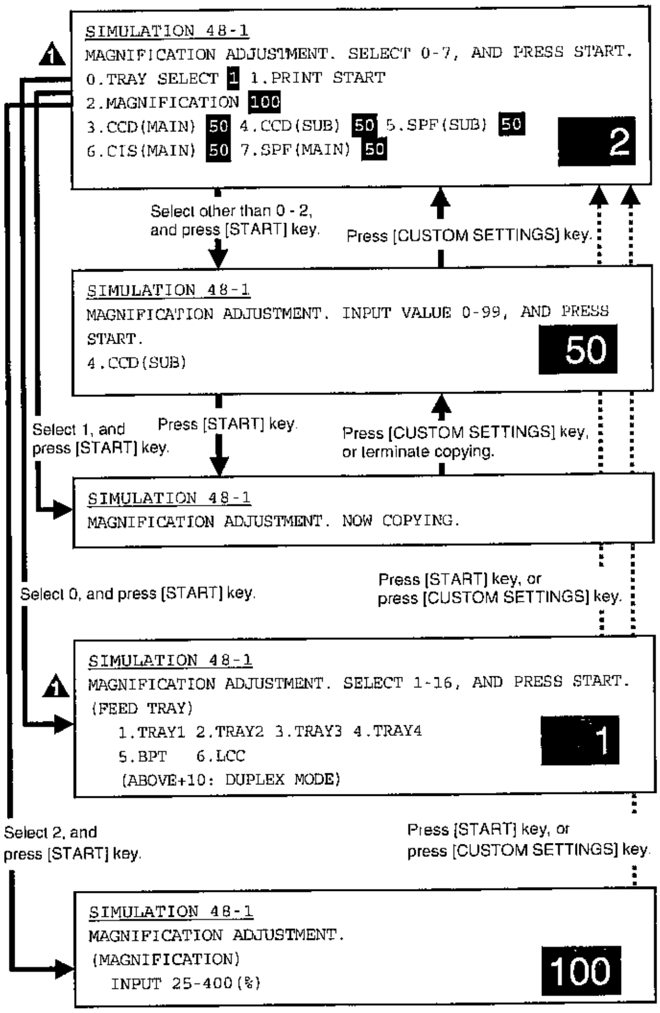


4) Determine the image magnification factor using the following formula:

   Image magnification factor (%) = Copy dimension/original dimension x 100

   Image magnification factor (%) = 99 / 100 x 100 = 99

   If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.
5) Go through the modes specified in Simulation 48-1.



```
⚠ SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. SELECT 0-7, AND PRESS START.
0.TRAY SELECT 1 1.PRINT START
2.MAGNIFICATION 100
3.CCD(MAIN) 50 4.CCD(SUB) 50 5.SPF(SUB) 50
6.CIS(MAIN) 50 7.SPF(MAIN) 50                         2
```

Select other than 0 - 2, and press [START] key.

Press [CUSTOM SETTINGS] key.

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. INPUT VALUE 0-99, AND PRESS
START.                                                50
4.CCD(SUB)
```

Select 1, and press [START] key.

Press [START] key.

Press [CUSTOM SETTINGS] key, or terminate copying.

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. NOW COPYING.
```

Select 0, and press [START] key.

Press [START] key, or press [CUSTOM SETTINGS] key.

```
⚠ SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. SELECT 1-16, AND PRESS START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4                     1
   5.BPT   6.LCC
   (ABOVE+10: DUPLEX MODE)
```

Select 2, and press [START] key.

Press [START] key, or press [CUSTOM SETTINGS] key.

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT.
(MAGNIFICATION)
  INPUT 25-400(%)                                    100
```

6) Using the numeric keypad, select the number that corresponds to the mode for which to make adjustments.

   ⚠ Select the adjustment item that is intended to adjust the image magnification in the main scanning direction in SPF front-face mode (CCD). (SPF (MAIN))
7) Press the Start key
8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.
9) Press the P or Start key

Pressing the Start key starts copy operation as well as applying the adjustment value.

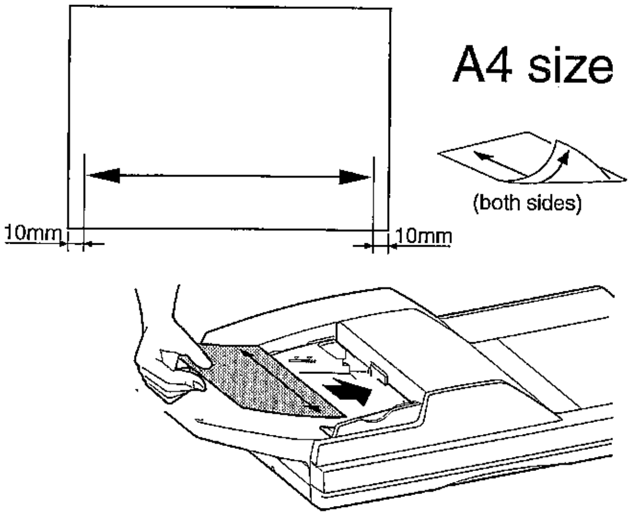
Repeat the above adjustments until an acceptable result is obtained.

ADJ 6D Adjust the image magnification in the main scanning direction in SPF back-face mode (CCD)

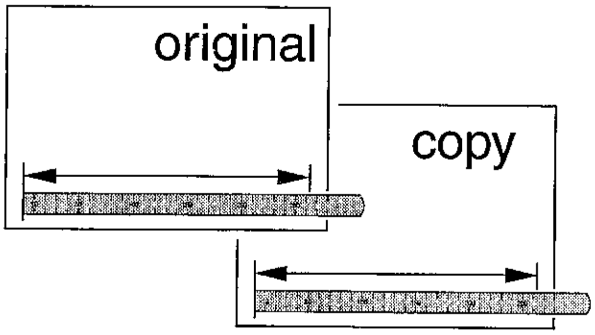
This adjustment is needed in the following situations:

- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- U2 trouble has occurred.
- Images are not correctly magnified in the main scanning direction.

1) On the SPF original tray, place such a duplex original as illustrated below.


A4 size
(both sides)
10mm
10mm

2) Make a normal duplex copy on A4 paper.
3) Measure the lengths of the copied image (on the back side) and the original image.


original
copy

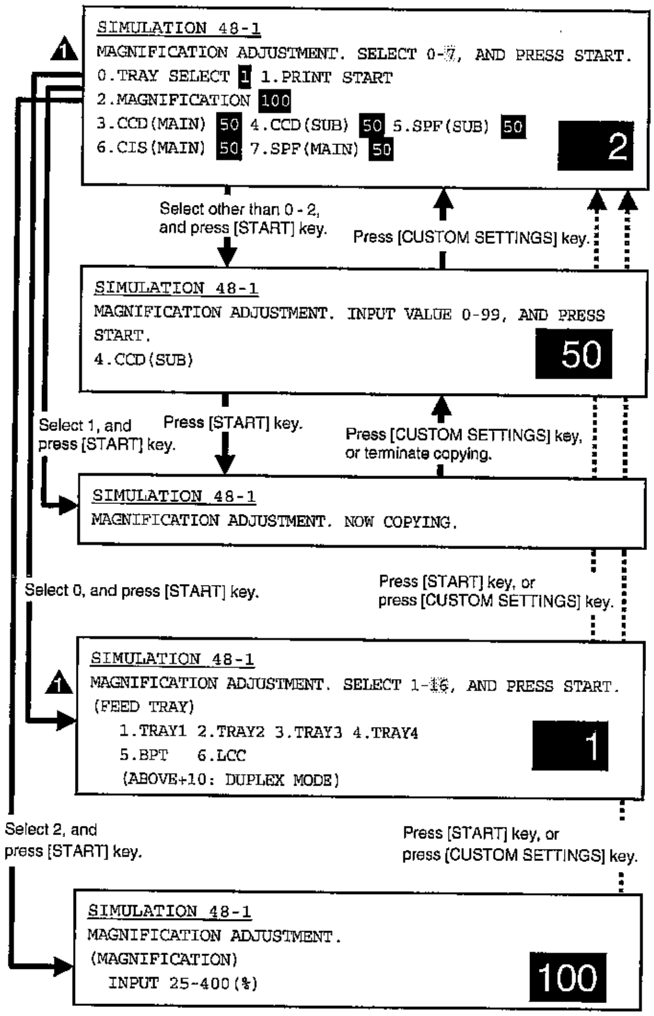
4) Determine the image magnification factor using the following formula:

   Image magnification factor (%) = Copy dimension/original dimension x 100

   Image magnification factor (%) = 99 / 100 x 100 = 99

   If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.

5) Go through the modes specified in Simulation 48-1.



```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. SELECT 0-7, AND PRESS START.
0.TRAY SELECT 1 1.PRINT START
2.MAGNIFICATION 100
3.CCD(MAIN) 50 4.CCD(SUB) 50 5.SPF(SUB) 50
6.CIS(MAIN) 50 7.SPF(MAIN) 50                          2
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. INPUT VALUE 0-99, AND PRESS
START.
4.CCD(SUB)                                            50
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. NOW COPYING.
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. SELECT 1-16, AND PRESS START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
   5.BPT   6.LCC                                       1
   (ABOVE+10: DUPLEX MODE)
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT.
(MAGNIFICATION)
  INPUT 25-400(%)                                    100
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

6) Select the number that corresponds to the adjustment item CIS (MAIN) using the numeric keypad.

   This adjustment item is intended to adjust the image magnification in the main scanning direction in SPF back-face mode (CIS). (CIS (MAIN))

7) Press the Start key
8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.
9) Press the P or Start key

   Pressing the Start key starts copy operation as well as applying the adjustment value.

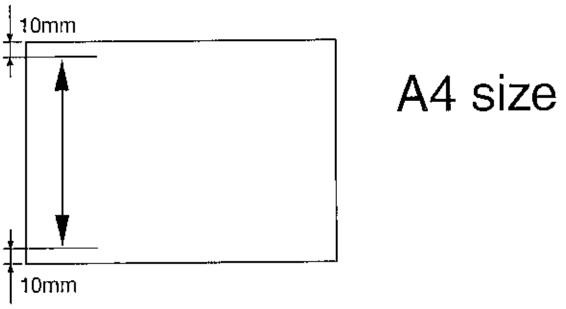
Repeat the above adjustments until an acceptable result is obtained.

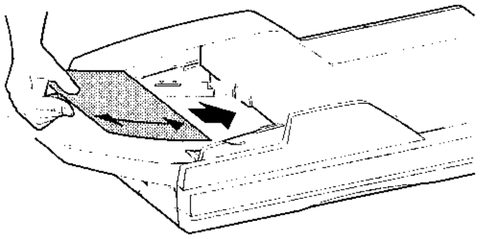
ADJ 6E Adjust the image magnification in the sub-scanning direction in SPF mode

This adjustment is needed in the following situations:

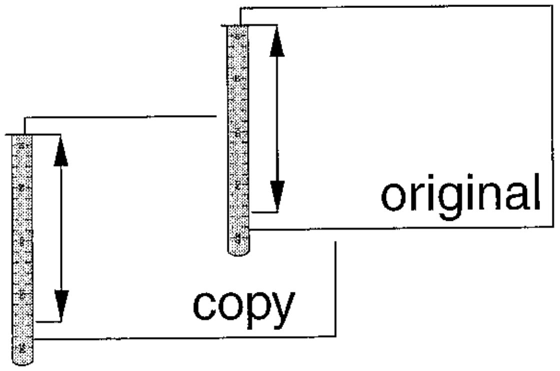
- Images are not correctly magnified in the sub-scanning direction.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- U2 trouble has occurred.

1) On the SPF original tray, place such an original as illustrated below.


10mm
A4 size
10mm



2) Make a normal copy on A4 paper.
3) Measure the lengths of the copied image and the original image.

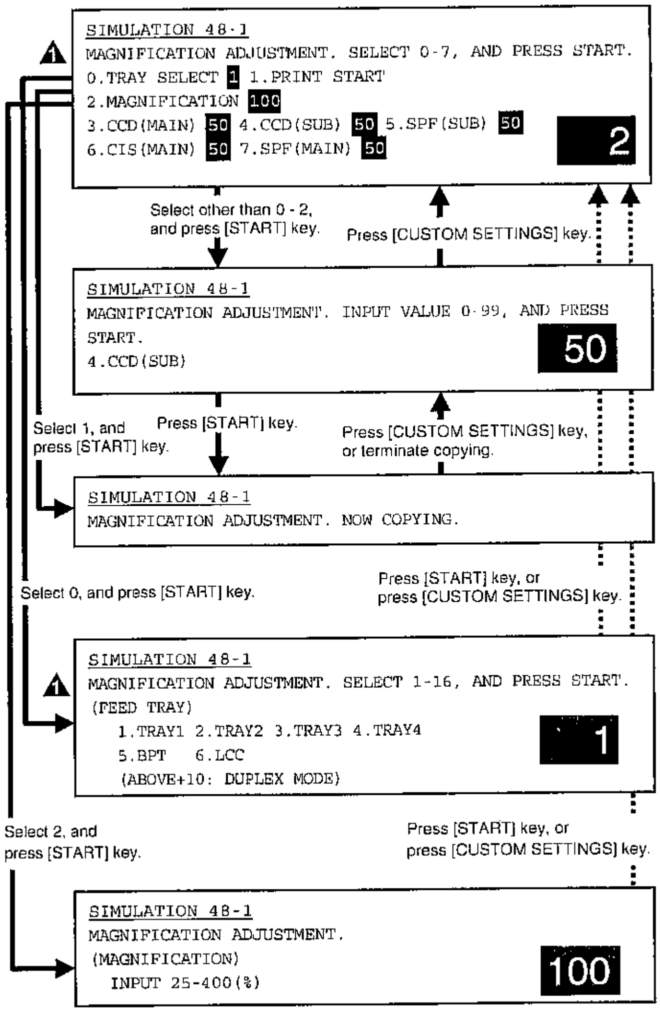

original
copy

4) Determine the image magnification factor using the following formula:

   Image magnification factor (%) = Copy dimension/original dimension x 100

   Image magnification factor (%) = 99 / 100 x 100 = 99

   If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.
5) Go through the modes specified in Simulation 48-1.



```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. SELECT 0-7, AND PRESS START.
0.TRAY SELECT 1 1.PRINT START
2.MAGNIFICATION 100
3.CCD(MAIN) 50 4.CCD(SUB) 50 5.SPF(SUB) 50
6.CIS(MAIN) 50 7.SPF(MAIN) 50                          2
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. INPUT VALUE 0-99, AND PRESS
START.                                                 50
4.CCD(SUB)
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. NOW COPYING.
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. SELECT 1-16, AND PRESS START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4                      1
   5.BPT   6.LCC
   (ABOVE+10: DUPLEX MODE)
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT.
(MAGNIFICATION)
  INPUT 25-400(%)                                      100
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

6) Select the number that corresponds to the adjustment item SPF (SUB) using the numeric keypad.

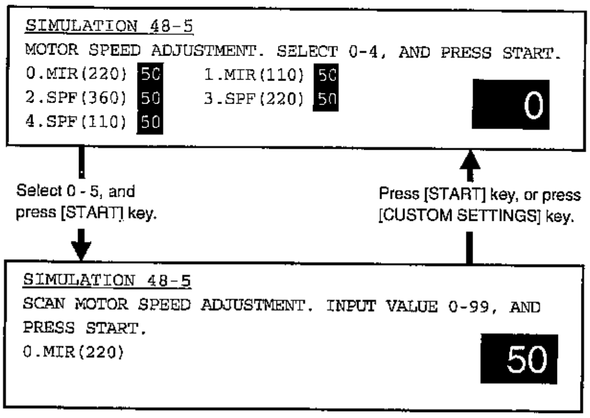
   ⚠ This adjustment items is intended to adjust the image magnification in the sub-scanning direction in SPF mode. (SPF (SUB))
7) Press the Start key
8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.
9) Press the P or Start key

   Pressing the Start key starts copy operation as well as applying the adjustment value.

Repeat the above adjustments until an acceptable result is obtained.

Note: After adjusting the image magnification in the sub-scanning direction through Simulation 48-1, do the following steps if making a copy at a different magnification factor fails to produce a correctly scaled copy.

1) Go through the modes specified in Simulation 48-5.



```
SIMULATION 48-5
MOTOR SPEED ADJUSTMENT. SELECT 0-4, AND PRESS START.
0.MIR(220) 50    1.MIR(110) 50
2.SPF(360) 50    3.SPF(220) 50                    0
4.SPF(110) 50
```

```
SIMULATION 48-5
SCAN MOTOR SPEED ADJUSTMENT. INPUT VALUE 0-99, AND
PRESS START.
0.MIR(220)                                        50
```

Select 0 - 5, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

2) Using the numeric keypad, select the number that corresponds to the mode for which to make adjustments.

2) Press the Start key

3) Enter the copy adjustment value using the numeric keypad.
Make adjustments by changing the adjustment value for high revolution mode if the copy magnification is not correct for microcopies; or the adjustment value for low revolution mode if the copy magnification is not correct for blowbacks.

4) Press the Start key
This applies the adjustment value.

ADJ 7 Adjusting the image off-center

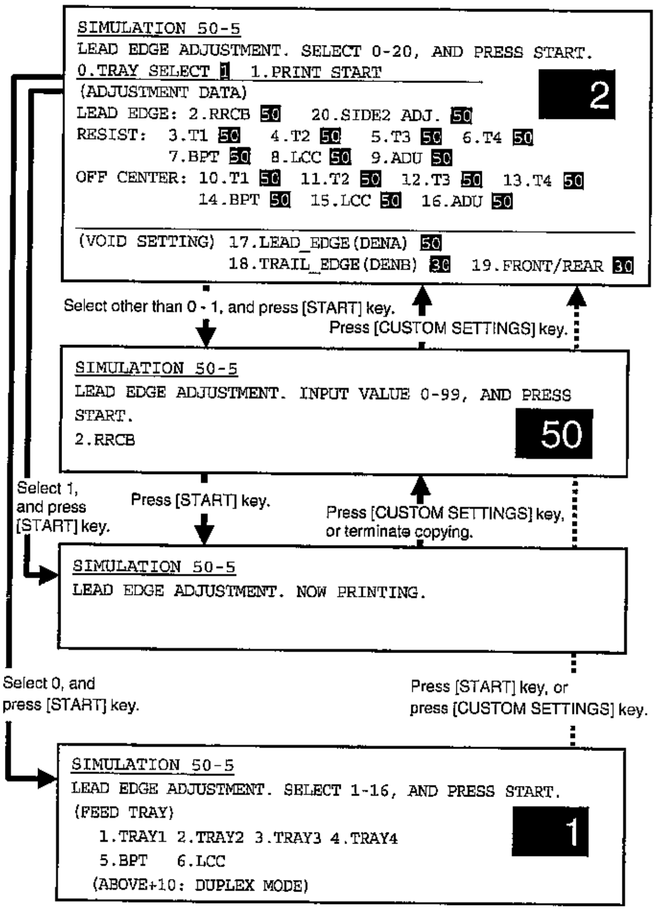
ADJ 7A Adjust the print image off-center (print engine section)

This adjustment is needed in the following situations:

- The paper feed section has been disassembled.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- The scanner (reading) section has been disassembled.
- The scanner (reading) unit has been replaced.
- The LSU has been replaced.
- U2 trouble has occurred.

(Print image off-center adjustment)

1) Go through the modes specified in Simulation 50-5.



```
SIMULATION 50-5
LEAD EDGE ADJUSTMENT. SELECT 0-20, AND PRESS START.
0.TRAY SELECT 1  1.PRINT START
(ADJUSTMENT DATA)                                          2
LEAD EDGE: 2.RRCB 50   20.SIDE2 ADJ. 50
RESIST:  3.T1 50   4.T2 50   5.T3 50   6.T4 50
         7.BPT 50  8.LCC 50  9.ADU 50
OFF CENTER: 10.T1 50  11.T2 50  12.T3 50  13.T4 50
            14.BPT 50  15.LCC 50  16.ADU 50

(VOID SETTING) 17.LEAD_EDGE(DENA) 50
               18.TRAIL_EDGE(DENB) 30  19.FRONT/REAR 30
```

```
SIMULATION 50-5
LEAD EDGE ADJUSTMENT. INPUT VALUE 0-99, AND PRESS
START.
2.RRCB                                              50
```

```
SIMULATION 50-5
LEAD EDGE ADJUSTMENT. NOW PRINTING.
```

```
SIMULATION 50-5
LEAD EDGE ADJUSTMENT. SELECT 1-16, AND PRESS START.
(FEED TRAY)
  1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4                   1
  5.BPT   6.LCC
 (ABOVE+10: DUPLEX MODE)
```

Select other than 0 - 1, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

Item			Set range	Default	
				AR-M550N/U, AR-M620N/U	AR-M700N/U
0	TRAY SELECT	Paper feed tray selection (1 - 6)	–	–	
1	PRINT START	Print start (Default)	–	–	
(Lead edge adjustment value)					
2	RRCB	Resist roller clutch ON timing adjustment value	0 - 99	50	
20	SIDE2-ADJ.	Offset (adjustment) of the RRCB setting during rear print.	1 - 99	50	
(Resist adjustment value)					
▲ 3	TRAY1	Tray 1 adjustment	0 - 99	46	48
4	TRAY2	Tray 2 adjustment		45	46
5	TRAY3	Tray 3 adjustment		46	47
6	TRAY4	Tray 4 adjustment		46	47
7	BPT	Manual feed tray adjustment		45	46
8	LCC	Side LCC adjustment		45	46
9	ADU	Adjustment when paper is fed again from ADU		43	46
(Off-center set value) Self print					
10	TRAY 1	Tray 1 adjustment	–	–	
11	TRAY 2	Tray 2 adjustment	–	–	
12	TRAY 3	Tray 3 adjustment	–	–	
13	TRAY 4	Tray 4 adjustment	–	–	
14	BPT	Manual feed tray adjustment	–	–	
15	LCC	Side LCC adjustment	–	–	
16	ADU	Adjustment when paper is fed again from ADU	–	–	
(Void set value)					
7	LEAD_EDGE (DENA)	Lead edge void set value	0 - 99	35	
8	TRAIL_EDGE (DENB)	Rear edge void adjustment value			
9	FRONT/REAR	Front/Rear void adjustment value			

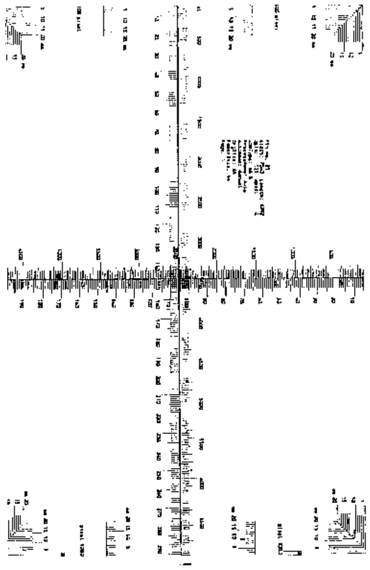
2) Enter the number that corresponds to the paper feed tray that needs adjustments. (Choose from numbers 10 to 16.)
3) Press the Start key
4) Press the Start key

A self-print pattern image is printed.

Check the off-center of the printed self-print pattern image.

If so, no adjustment is required.

⚠ Measure the void area dimensions in the front and rear frame directions, and make sure that the difference between the two dimensions is within ±1.5 mm.



If the above requirement is not met, do the following steps.

5) Using the numeric keypad, change the adjustment value in steps of 0.1 mm. A larger setting shifts the printed image toward the front side.
6) Press the P or Start key. Pressing the Start key starts print operation as well as applying the adjustment value.

Check the off-center of the printed self-print pattern image.

Repeat steps 5 to 6 until an acceptable result is obtained.

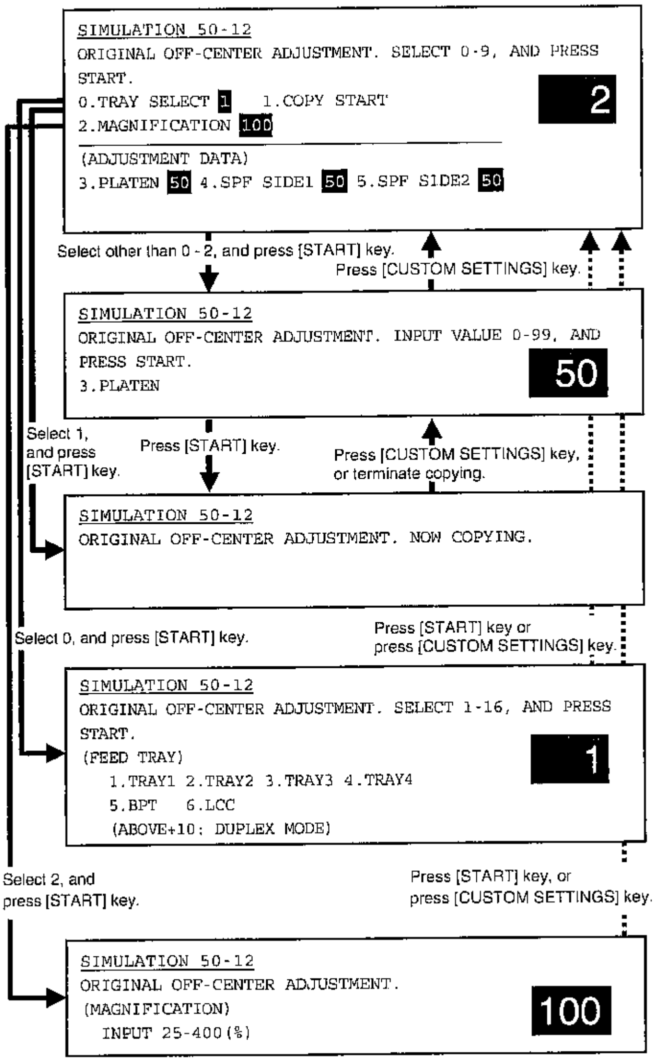
ADJ 7B Adjust the scanned image off-center in original table mode (scan section)

This adjustment is needed in the following situations:

- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- The scanner (reading) section has been disassembled.
- The scanner (reading) unit has been replaced.
- U2 trouble has occurred.

(Adjustment mode selection)

1) Go through the modes specified in Simulation 50-12.



```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. SELECT 0-9, AND PRESS
START.
0.TRAY SELECT 1     1.COPY START                    2
2.MAGNIFICATION 100
(ADJUSTMENT DATA)
3.PLATEN 50 4.SPF SIDE1 50 5.SPF SIDE2 50
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. INPUT VALUE 0-99, AND
PRESS START.
3.PLATEN                                           50
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. NOW COPYING.
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. SELECT 1-16, AND PRESS
START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4                  1
   5.BPT    6.LCC
   (ABOVE+10: DUPLEX MODE)
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT.
(MAGNIFICATION)
  INPUT 25-400(%)                                 100
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	–
1	COPY START	Copy START (Default)	–	–
2	MAGNIFICATION	Print magnification ratio	25 - 400%	100
(Off-center adjustment value)				
3	PLATEN	OC mode adjustment	0 - 99	50
4	SPF SIDE1	SPF front surface adjustment		
5	SPF SIDE2	SPF back surface adjustment		

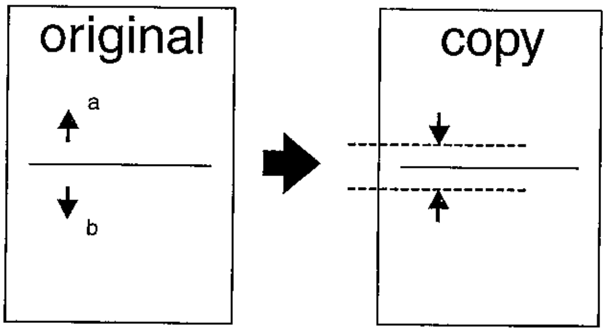
2) Using the numeric keypad, select the adjustment item PLATEN, which is intended to adjust the off-center in original table mode.
3) Press the Start key

(Scan off-center adjustment)

1) Place an original on the original table.
2) Press the Start key

Check the off-center of the printed image.

If the off-center is 0±4.0 mm, no adjustment is required.


original
a
b
copy

If the above requirement is not met, do the following steps.

3) Using the numeric keypad, change the adjustment value in steps of 0.1 mm to adjust the scan image off-center. A larger setting shifts the printed image toward the rear side.
4) Press the P or Start key.
   Pressing the Start key starts copy operation as well as applying the adjustment value.
5) Check the off-center of the printed image.
   Repeat the above adjustments until an acceptable result is obtained.

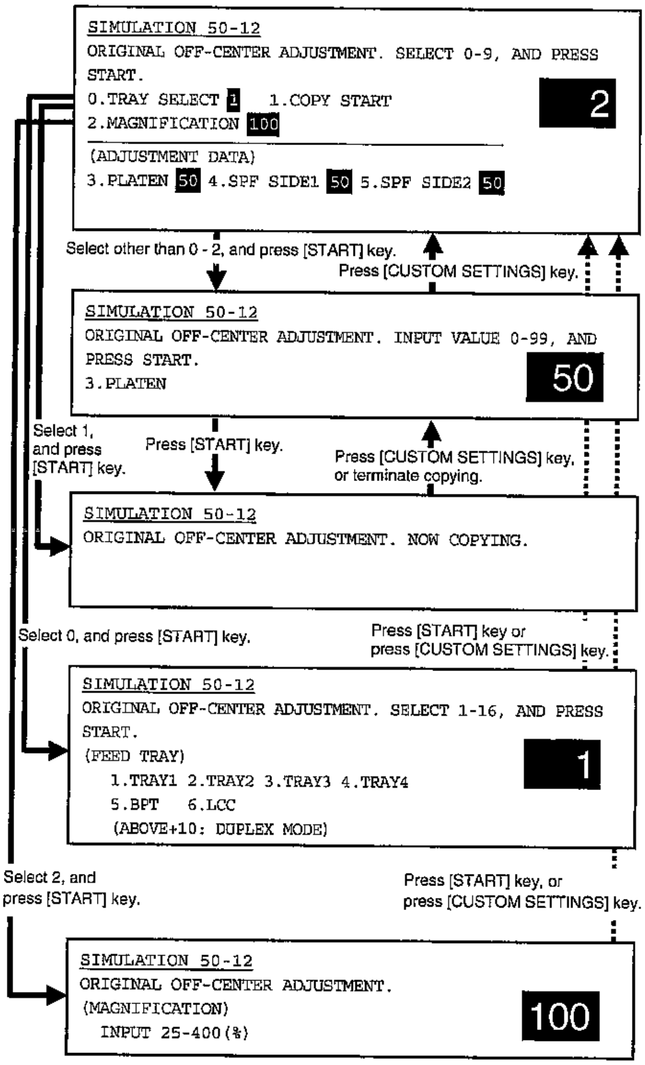
ADJ 7C Adjust the scanned image off-center in SPF front-face mode (scan section)

This adjustment is needed in the following situations:

- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- The scanner (reading) section has been disassembled.
- The scanner (reading) unit has been replaced.
- U2 trouble has occurred.
- The SPF section has been disassembled.
- The SPF unit has been replaced.

(Adjustment mode selection)

1) Go through the modes specified in Simulation 50-12.



```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. SELECT 0-9, AND PRESS
START.
0.TRAY SELECT 1   1.COPY START                          2
2.MAGNIFICATION 100
(ADJUSTMENT DATA)
3.PLATEN 50 4.SPF SIDE1 50 5.SPF SIDE2 50
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. INPUT VALUE 0-99, AND
PRESS START.                                            50
3.PLATEN
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. NOW COPYING.
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. SELECT 1-16, AND PRESS
START.
(FEED TRAY)                                             1
  1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
  5.BPT   6.LCC
  (ABOVE+10: DUPLEX MODE)
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT.
(MAGNIFICATION)                                         100
  INPUT 25-400(%)
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	–
1	COPY START	Copy START (Default)	–	–
2	MAGNIFICATION	Print magnification ratio	25 - 400%	100
(Off-center adjustment value)				
3	PLATEN	OC mode adjustment	0 - 99	50
4	SPF SIDE1	SPF front surface adjustment		
5	SPF SIDE2	SPF back surface adjustment		

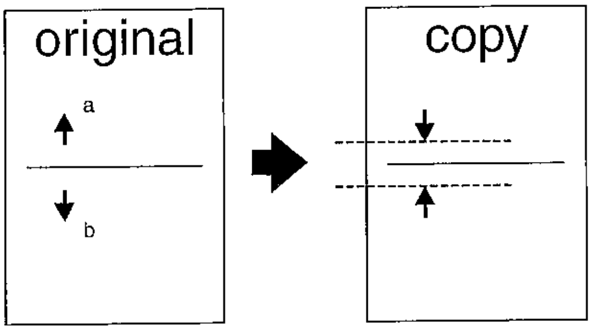
2) Using the numeric keypad, select the adjustment item SPF SIDE1, which is intended to adjust the off-center in SPF front-face mode.
3) Press the Start key

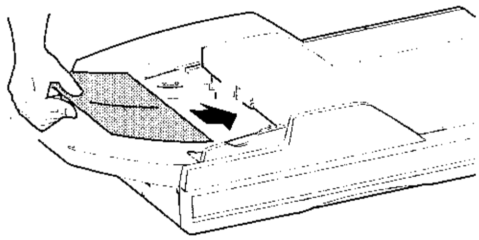
(Scan off-center adjustment)

1) Place an original on the SPF original tray.
2) Press the Start key

   Check the off-center of the printed image.

⚠ If the off-center is 0±2.5 mm, no adjustment is required.


original
a
b
copy



If the above requirement is not met, do the following steps.

3) Using the numeric keypad, change the adjustment value in steps of 0.1 mm to adjust the scan image off-center. A larger setting shifts the printed image toward the rear side.
4) Press the P or Start key.

   Pressing the Start key starts copy operation as well as applying the adjustment value.
5) Check the off-center of the printed image.

Repeat the above adjustments until an acceptable result is obtained.

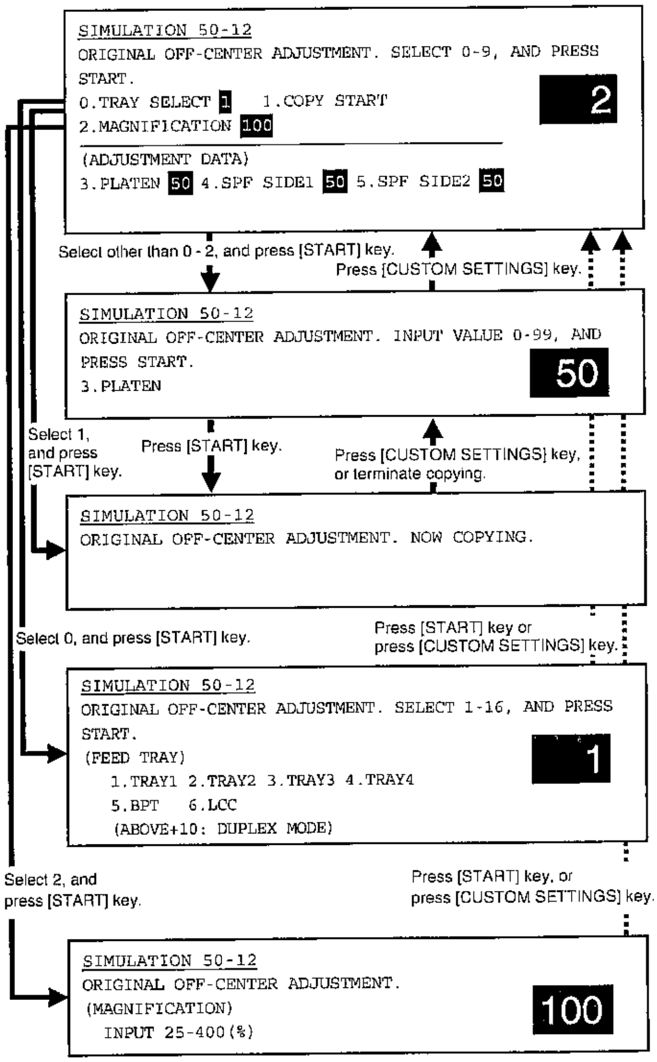
ADJ 7D Adjust the scanned image off-center in SPF back-face mode (scan section)

This adjustment is needed in the following situations:

- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- The scanner (reading) section has been disassembled.
- The scanner (reading) unit has been replaced.
- U2 trouble has occurred.
- The SPF section has been disassembled.
- The SPF unit has been replaced.

(Adjustment mode selection)

1) Go through the modes specified in Simulation 50-12.



```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. SELECT 0-9, AND PRESS
START.
0.TRAY SELECT 1    1.COPY START                      2
2.MAGNIFICATION 100
(ADJUSTMENT DATA)
3.PLATEN 50 4.SPF SIDE1 50 5.SPF SIDE2 50
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. INPUT VALUE 0-99, AND
PRESS START.
3.PLATEN                                             50
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. NOW COPYING.
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. SELECT 1-16, AND PRESS
START.
(FEED TRAY)                                           1
  1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
  5.BPT   6.LCC
  (ABOVE+10: DUPLEX MODE)
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT.
(MAGNIFICATION)                                     100
  INPUT 25-400(%)
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	–
1	COPY START	Copy START (Default)	–	–
2	MAGNIFICATION	Print magnification ratio	25 - 400%	100
(Off-center adjustment value)				
3	PLATEN	OC mode adjustment	0 - 99	50
4	SPF SIDE1	SPF front surface adjustment		
5	SPF SIDE2	SPF back surface adjustment		

2) Using the numeric keypad, select the adjustment item SPF SIDE2, which is intended to adjust the off-center in SPF back-face mode.
3) Press the Start key

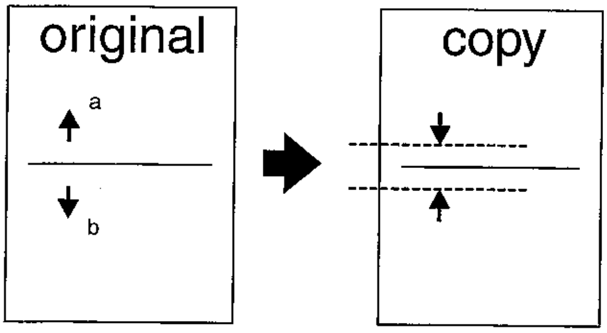
⚠: Feb. 9 2004

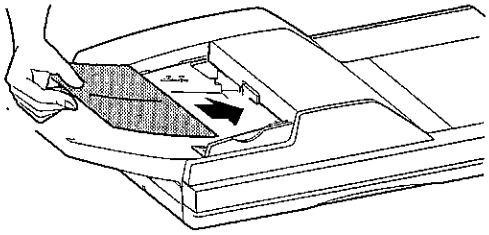
(Scan off-center adjustment)

1) Place a duplex document in the SPF original tray.
2) Press the Start key

   Since the front side and back side images are copied onto separate sheets, check the off-center of the back side image.

   ⚠ If the off-center is 0±2.7 mm, no adjustment is required.


original
a
b
copy



If the above requirement is not met, do the following steps.

3) Using the numeric keypad, change the adjustment value in steps of 0.1 mm to adjust the scan image off-center. A larger setting shifts the printed image toward the front side.
4) Press the P or Start key.

   Pressing the Start key starts copy operation as well as applying the adjustment value.
5) Check the off-center of the printed image.

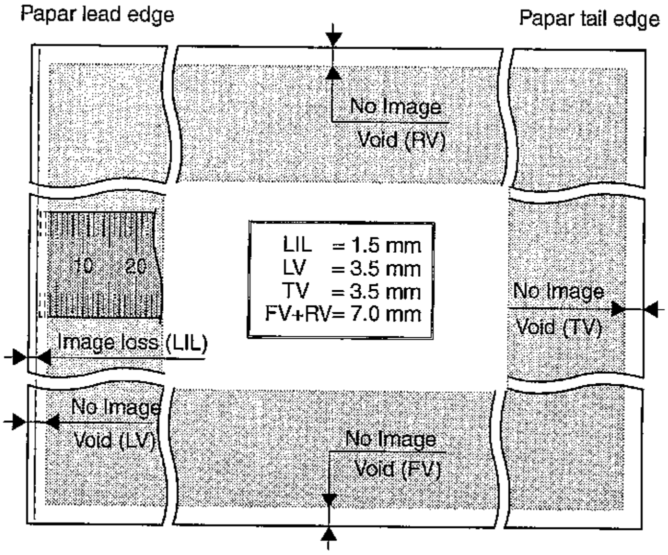
Repeat the above adjustments until an acceptable result is obtained.

ADJ 8 Adjusting the image position, image loss, and void area

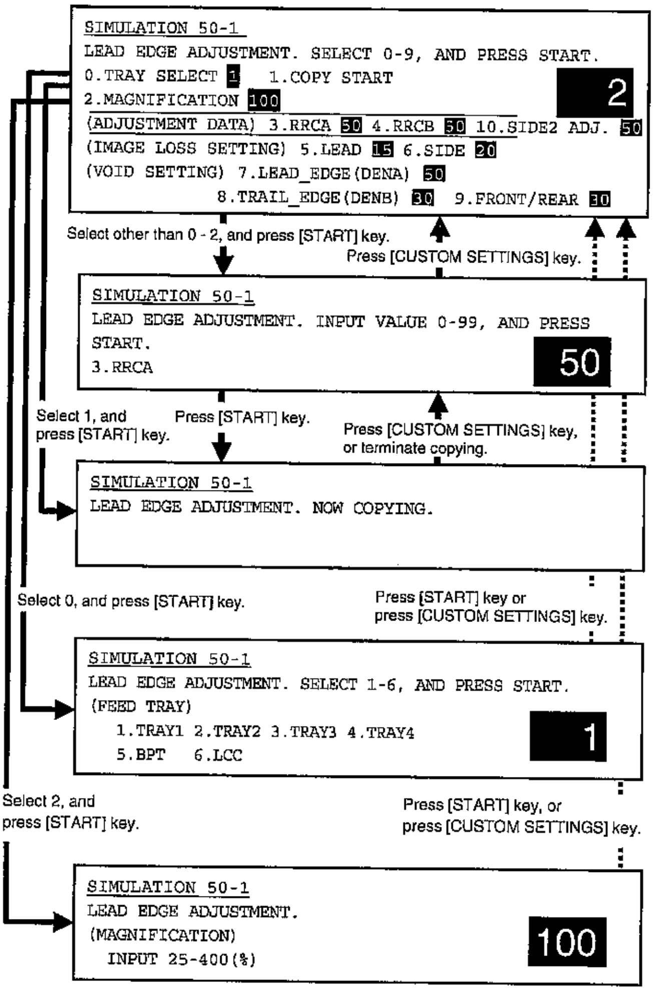
ADJ 8A Adjust copied image loss/void area in original table mode

This adjustment is needed in the following situations:

- The paper feed section has been disassembled.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- The scanner (reading) section has been disassembled.
- The scanner (reading) unit has been replaced.
- The LSU has been replaced.
- U2 trouble has occurred.


Papar lead edge
Papar tail edge
No Image
Void (RV)
10
20
Image loss (LIL)
LIL = 1.5 mm
LV = 3.5 mm
TV = 3.5 mm
FV+RV= 7.0 mm
No Image
Void (TV)
No Image
Void (LV)
No Image
Void (FV)

1) Go through the modes specified in Simulation 50-1.


Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

```
SIMULATION 50-1
LEAD EDGE ADJUSTMENT. SELECT 0-9, AND PRESS START.
0.TRAY SELECT 1   1.COPY START                       2
2.MAGNIFICATION 100
(ADJUSTMENT DATA) 3.RRCA 50 4.RRCB 50 10.SIDE2 ADJ. 50
(IMAGE LOSS SETTING) 5.LEAD 15 6.SIDE 20
(VOID SETTING) 7.LEAD_EDGE(DENA) 50
               8.TRAIL_EDGE(DENB) 30  9.FRONT/REAR 30
```

```
SIMULATION 50-1
LEAD EDGE ADJUSTMENT. INPUT VALUE 0-99, AND PRESS
START.
3.RRCA                                              50
```

```
SIMULATION 50-1
LEAD EDGE ADJUSTMENT. NOW COPYING.
```

```
SIMULATION 50-1
LEAD EDGE ADJUSTMENT. SELECT 1-6, AND PRESS START.
(FEED TRAY)
  1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4                    1
  5.BPT   6.LCC
```

```
SIMULATION 50-1
LEAD EDGE ADJUSTMENT.
(MAGNIFICATION)
  INPUT 25-400(%)                                  100
```

Item		Content	Set range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	–
1	COPY START	Copy START (Default)	–	–
2	MAGNIFICATION	Print magnification ratio	25 - 400%	–
(Lead edge adjustment value)				
3	RRCA	Document scan start position	0 - 99	50
4	RRCB	Resist roller clutch ON timing adjustment value		
10	SIDE2-ADJ.	Offset (adjustment) of the RRCB setting during rear print.	1 - 99	50
(Image loss set value)				
5	LEAD	Lead edge image loss set value	0 - 99	15
6	SIDE	Side image loss set value		20
(Void set value)				
7	LEAD_EDGE (DENA)	Lead edge void set value	0 - 99	35
8	TRAIL_EDGE (DENB)	Rear edge void adjustment value		
9	FRONT/REAR	Front/Rear void adjustment value		

(Leading edge image loss/void area adjustment)

1) Set the adjustment values for leading edge image loss and leading edge void as follows:

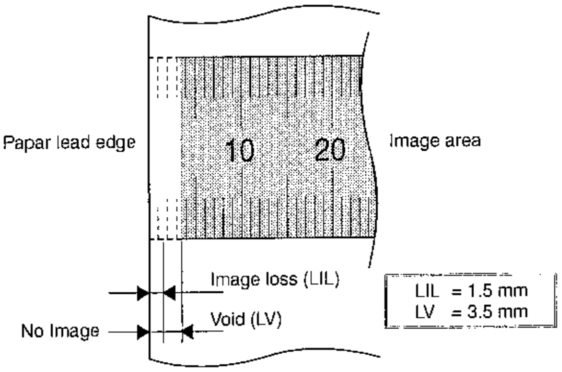
   (Standard setting)

   Leading edge image loss: 1.5 mm (LEAD:15)

   Leading edge void: 3.5mm (DENA:35)

   - Set the adjustment value for (LEAD) to 15 by entering "15" into the (LEAD) adjustment value field and then pressing the P key.
   - Set the adjustment value for (DENA) to 35 by entering "35" into the (DENA) adjustment value field and then pressing the P key.

2) Make a copy at 100% magnification by entering "100" into the (MAGNIFICATION) field and then pressing the Start key, and check the leading edge void area and image loss.



If the leading edge image loss and void area are not at acceptable levels, do the following steps.

(The adjustment value should be changed in steps of 1msec/0.1mm.)

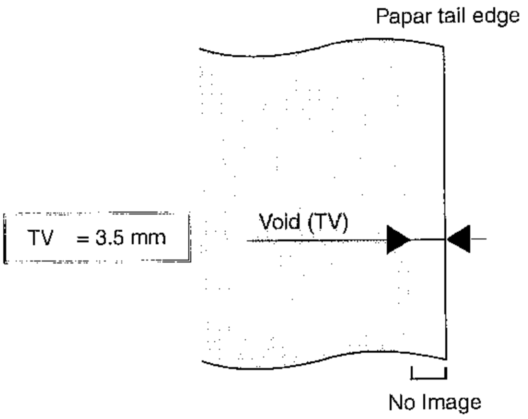
- If the leading edge void area is not 3.5 mm:
  Repeat the process of changing the (RRCB) adjustment value and then pressing the Start key until attaining an acceptable level. (The adjustment value should be change in steps of 1msec/step, 0.1mm/step.)
- If the leading edge image loss is not 1.5mm:
  Repeat the process of changing the (RRCA) adjustment value, in steps of 0.1 mm, and then pressing the Start key until attaining an acceptable level. (The adjustment value should be changed in steps of 0.2mm.)

Repeat the above adjustments until acceptable results are obtained.

(Trailing edge void area adjustment)

1) Make a copy at 100% magnification by entering "100" into the (MAGNIFICATION) field and then pressing the Start key, and check the trailing edge void area.

   (Standard setting) Trailing edge void area: 3.5 mm



If the trailing edge void area is not at an acceptable level, do the following steps.

2) Repeat the process of changing the (TRAIL EDGE) adjustment value and then pressing the Start key until attaining an acceptable level.

   Repeat the above adjustments until acceptable results are obtained.

(Front/rear frame direction image loss adjustment)

1) Set the (SIDE) adjustment value to 20 by entering "20" into the (SIDE) adjustment value field and then pressing the P key.

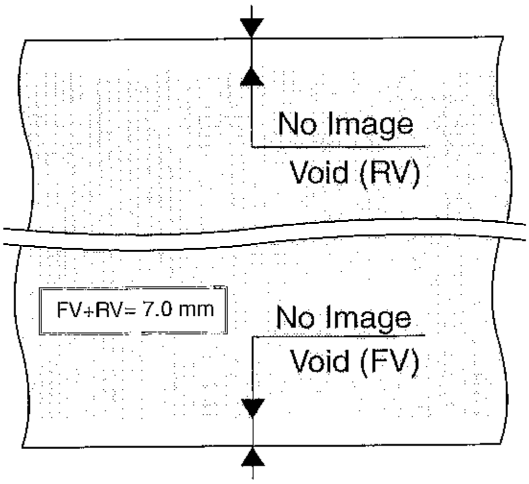
   Note that changing this adjustment value shifts the image position in the front/rear frame direction.

(Front/rear frame direction void area)

1) Make a copy at 100% magnification by entering "100" into the (MAGNIFICATION) field and then pressing the Start key, and check the front/rear frame direction void area.

   (Standard settings)

   Front frame side void area = 3.5 mm, rear frame side void area = 3.5 mm, sum of front/rear frame direction void area = 7.0 mm



If the front/rear frame direction void area is not at an acceptable level, do the following steps.

2) Repeat the process of changing the (FRONT/REAR) adjustment value and then pressing the Start key until attaining an acceptable level.

Repeat the above adjustments until acceptable results are obtained.

Note: If the front and rear frame side void areas are not equal, adjust the image off-center position using Simulation 50-5.

ADJ 8B Adjust the original scan start position (adjust the scanner read position in SPF-mode front face scan)

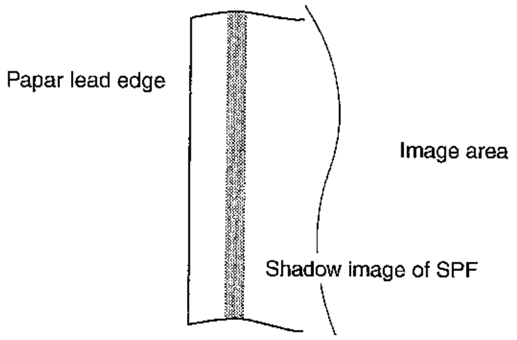
This adjustment is needed in the following situations:

- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- The scanner (reading) section has been disassembled.
- The scanner (reading) unit has been replaced.
- U2 trouble has occurred.
- The SPF section has been disassembled.
- The SPF unit has been replaced.

This adjustment is intended to adjust the scanner read position in SPF-mode front face scan.

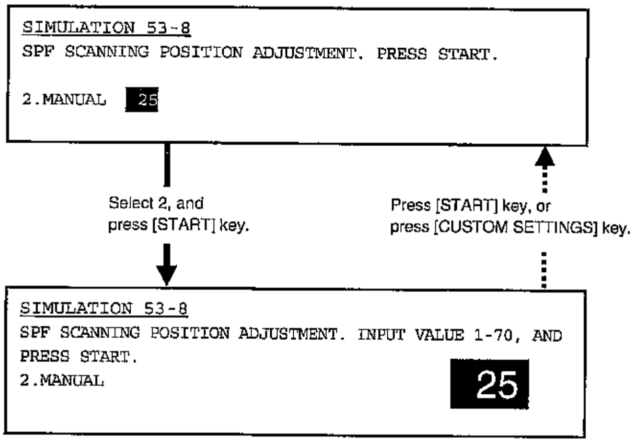
An incorrect adjustment would deviate the scanner stop position from the required position, thus possibly causing a shadow of the original table to appear at the leading edge of an image generated by SPF (front-face) mode scan.

1) Make a copy in SPF (front-face) mode, and make sure that the printed image at the leading edge of the copied image is free from shadows.


Papar lead edge
Image area
Shadow image of SPF

If the printed image at the leading edge of the copied image contains a shadow of the original table, then do the following steps.

2) Go through the modes specified in Simulation 53-8.



```
SIMULATION 53-8
SPF SCANNING POSITION ADJUSTMENT. PRESS START.

2.MANUAL  25
```

Select 2, and
press [START] key.
Press [START] key, or
press [CUSTOM SETTINGS] key.

```
SIMULATION 53-8
SPF SCANNING POSITION ADJUSTMENT. INPUT VALUE 1-70, AND
PRESS START.
2.MANUAL                                  25
```

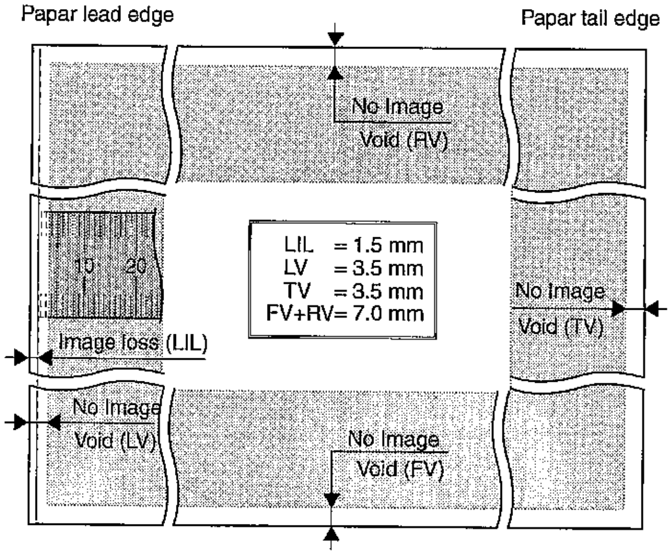
3) Enter the adjustment value and press the Start key.

Repeat the above adjustments until an acceptable result is obtained.

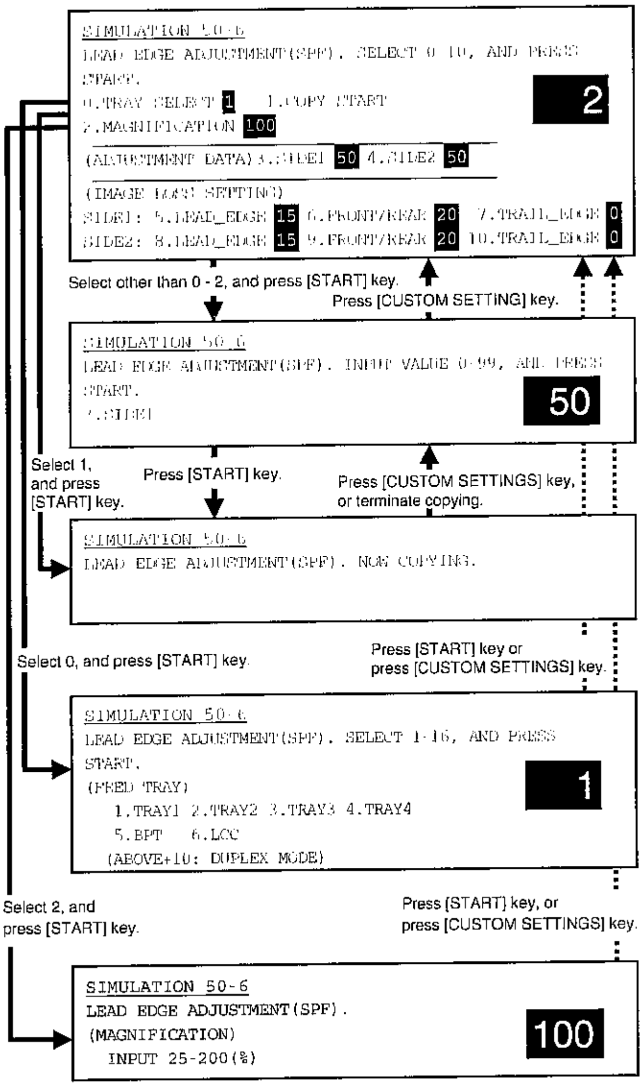
ADJ 8C Adjust the copied image loss/void area in SPF mode

This adjustment is needed in the following situations:

- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- The scanner (reading) section has been disassembled.
- The scanner (reading) unit has been replaced.
- U2 trouble has occurred.
- The SPF section has been disassembled.
- The SPF unit has been replaced.


Papar lead edge
Papar tail edge
No Image
Void (RV)
10
20
LIL = 1.5 mm
LV = 3.5 mm
TV = 3.5 mm
FV+RV= 7.0 mm
No Image
Void (TV)
Image loss (LIL)
No Image
Void (LV)
No Image
Void (FV)

1) Go through the modes specified in Simulation 50-6.



```
SIMULATION 50-6
LEAD EDGE ADJUSTMENT(SPF). SELECT 0-10, AND PRESS
START.                                              2
0.TRAY SELECT 1    1.COPY START
2.MAGNIFICATION 100
(ADJUSTMENT DATA) 3.SIDE1 50 4.SIDE2 50
(IMAGE LOSS SETTING)
SIDE1: 5.LEAD_EDGE 15 6.FRONT/REAR 20  7.TRAIL_EDGE 0
SIDE2: 8.LEAD_EDGE 15 9.FRONT/REAR 20 10.TRAIL_EDGE 0
```

```
SIMULATION 50-6
LEAD EDGE ADJUSTMENT(SPF). INPUT VALUE 0-99, AND PRESS
START.                                             50
3.SIDE1
```

```
SIMULATION 50-6
LEAD EDGE ADJUSTMENT(SPF). NOW COPYING.
```

```
SIMULATION 50-6
LEAD EDGE ADJUSTMENT(SPF). SELECT 1-16, AND PRESS
START.                                              1
(FEED TRAY)
  1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
  5.BPT   6.LCC
 (ABOVE+10: DUPLEX MODE)
```

```
SIMULATION 50-6
LEAD EDGE ADJUSTMENT(SPF).
(MAGNIFICATION)                                   100
  INPUT 25-200(%)
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTING] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	–
1	COPY START	Copy START (Default)	–	–
2	MAGNIFICATION	Print magnification ratio	25 - 200%	–
(Lead edge adjustment value)				
3	SIDE1	Front surface document scan start position adjustment value	0 - 99	50
4	SIDE2	Back surface document scan start position adjustment value		
(Image loss set value: SIDE 1)				
5	LEAD_EDGE	Front surface lead edge image loss set value	0 - 99	15
6	FRONT_REAR	Front surface side edge image loss set value		20
7	TRAIL_EDGE	Front surface rear edge image loss set value	0 - 20	0
(Image loss set value: SIDE 2)				
8	LEAD_EDGE	Back surface lead edge image loss set value	0 - 99	15
9	FRONT/REAR	Back surface side edge image loss set value		20
10	TRAIL_EDGE	Back surface rear edge image loss set value	0 - 20	0

(Leading edge image loss adjustment)

1) Set the adjustment values for leading edge image loss for the front and back sides as follows:

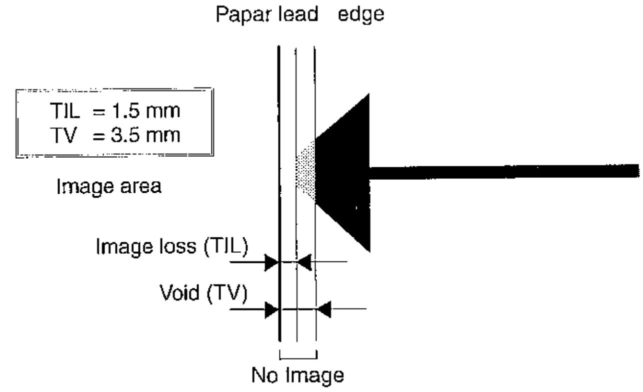
(Standard setting)

⚠ 5 LEAD_EDGE: 15
8 LEAD_EDGE: 15

Paper leading edge void: 3.5mm (DENA:35)

⚠ - Set the adjustment value for "5 LEAD_EDGE" and "8 LEAD_EDGE" to 15 by entering "15" into the (LEAD EDGE) adjustment value field and then pressing the P key.

2) In SPF mode, make a duplex copy at 100% magnification, and make sure that the leading edge image loss is 1.5 mm for both the front and back sides. (Select duplex mode from the paper selection mode as described in Simulation 50-6). (Enter "100" into the (MAGNIFICATION) field, and then press the start key).


Papar lead edge
TIL = 1.5 mm
TV = 3.5 mm
Image area
Image loss (TIL)
Void (TV)
No Image

If an acceptable result is not obtained, do the following steps.

3) Repeat the process of changing the (SIDE1 & SIDE2) adjustment values and then pressing the Start key until attaining an acceptable level.

SIDE1: Adjustment value for the position at which to read the leading edge of the original in SPF front side mode.

SIDE2: Adjustment value for the position at which to read the leading edge of the original in SPF back side mode.

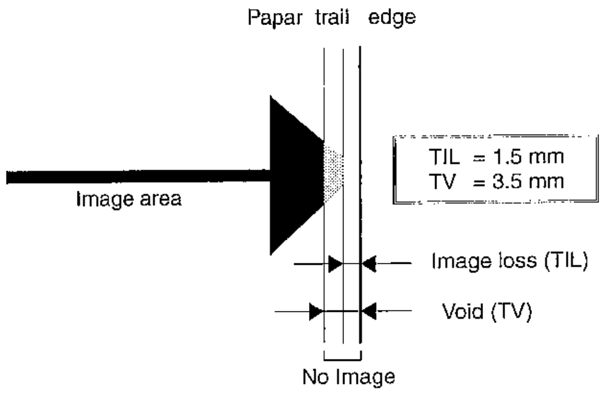
(The adjustment value should be changed in steps of 0.1 mm.)

(The timing in which to start reading the image should be determined based on the timing in which detector SPPD4 detects the leading edge of the original.)

Repeat steps 2 to 3 until an acceptable result is obtained.

(Trailing edge image loss adjustment)

1) Select duplex mode from paper selection mode as described in Simulation 50-6, enter "100" into the (MAGNIFICATION) field, and then press the Start key to make a duplex copy at 100% magnification in SPF mode, and make sure that the trailing edge image loss is 1.5 mm for both front and back sides.


Papar trail edge
TIL = 1.5 mm
TV = 3.5 mm
Image area
Image loss (TIL)
Void (TV)
No Image

If an acceptable result is not obtained, do the following steps.

2) Repeat the process of changing the (TRAIL EDGE) adjustment value and then pressing the Start key until attaining an acceptable level.

Repeat the above adjustments until an acceptable result is obtained.

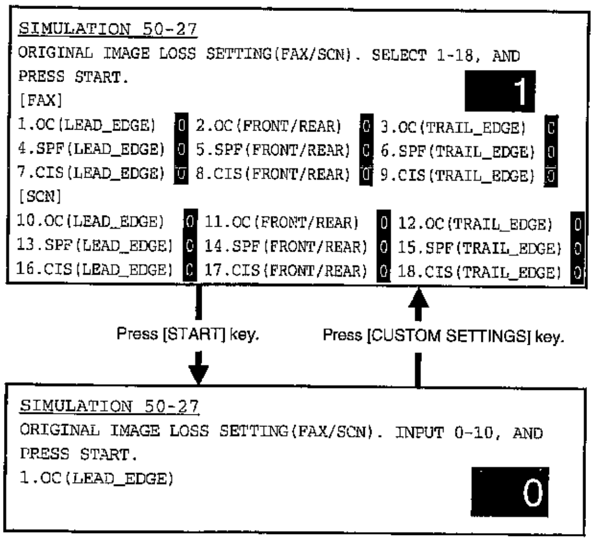
(Front/rear frame direction image loss adjustment)

1) Set the (FRONT/REAR) adjustment value to 20 by entering "20" into the (FRONT/REAR) adjustment value field and then pressing the P key.

Note that changing this adjustment value shifts the image position in the front/rear frame direction.

ADJ 8D Adjust the image loss in scanner mode

1) Go through the modes specified in Simulation 50-27.



```
SIMULATION 50-27
ORIGINAL IMAGE LOSS SETTING(FAX/SCN). SELECT 1-18, AND
PRESS START.
[FAX]                                                   1
1.OC(LEAD_EDGE)   0 2.OC(FRONT/REAR)   0 3.OC(TRAIL_EDGE)   0
4.SPF(LEAD_EDGE)  0 5.SPF(FRONT/REAR)  0 6.SPF(TRAIL_EDGE)  0
7.CIS(LEAD_EDGE)  0 8.CIS(FRONT/REAR)  0 9.CIS(TRAIL_EDGE)  0
[SCN]
10.OC(LEAD_EDGE)  0 11.OC(FRONT/REAR)  0 12.OC(TRAIL_EDGE)  0
13.SPF(LEAD_EDGE) 0 14.SPF(FRONT/REAR) 0 15.SPF(TRAIL_EDGE) 0
16.CIS(LEAD_EDGE) 0 17.CIS(FRONT/REAR) 0 18.CIS(TRAIL_EDGE) 0
```

Press [START] key. Press [CUSTOM SETTINGS] key.

```
SIMULATION 50-27
ORIGINAL IMAGE LOSS SETTING(FAX/SCN). INPUT 0-10, AND
PRESS START.
1.OC(LEAD_EDGE)
                                                        0
```

Item			Set range	Default
FAX send				
1	OC (LEAD_EDGE)	OC lead edge	0 - 10 (Unit 1mm)	3 (3mm)
2	OC (FRONT/REAR)	OC side		
3	OC (TRAIL_EDGE)	OC rear edge		
4	SPF (LEAD_EDGE)	SPF lead edge		
5	SPF (FRONT/REAR)	SPF side		
6	SPF (TRAIL_EDGE)	SPF rear edge		
7	CIS (LEAD_EDGE)	CIS lead edge		
8	CIS (FRONT/REAR)	CIS side		
9	CIS (TRAIL_EDGE)	CIS rear edge		
Scanner mode				
10	OC (LEAD_EDGE)	OC lead edge	0 - 10 (Unit 1mm)	0 (0mm)
11	OC (FRONT/REAR)	OC side		
12	OC (TRAIL_EDGE)	OC rear edge		
13	SPF (LEAD_EDGE)	SPF lead edge		
14	SPF (FRONT/REAR)	SPF side		
15	SPF (TRAIL_EDGE)	SPF rear edge		
16	CIS (LEAD_EDGE)	CIS lead edge		
17	CIS (FRONT/REAR)	CIS side		
18	CIS (TRAIL_EDGE)	CIS rear edge		

2) Using the numeric keypad, enter the number that corresponds to the scanner mode adjustment item.

3) Press the Start key

4) Enter the adjustment value using the numeric keypad.

5) Press the Start key

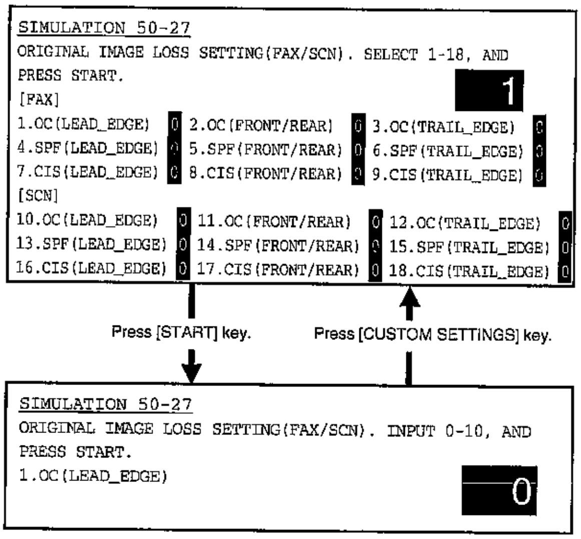
(The adjustment value should be changed in steps of 1.0mm.)

Scanned images must be visually checked for image loss.

Note: Make adjustments in the same manner as in ADJ 8A and ADJ 8C.

ADJ 8E Adjust the image loss for images sent in fax mode

1) Go through the modes specified in Simulation 50-27.



```
SIMULATION 50-27
ORIGINAL IMAGE LOSS SETTING(FAX/SCN). SELECT 1-18, AND
PRESS START.
[FAX]                                                   1
1.OC(LEAD_EDGE)   0 2.OC(FRONT/REAR)   0 3.OC(TRAIL_EDGE)   0
4.SPF(LEAD_EDGE)  0 5.SPF(FRONT/REAR)  0 6.SPF(TRAIL_EDGE)  0
7.CIS(LEAD_EDGE)  0 8.CIS(FRONT/REAR)  0 9.CIS(TRAIL_EDGE)  0
[SCN]
10.OC(LEAD_EDGE)  0 11.OC(FRONT/REAR)  0 12.OC(TRAIL_EDGE)  0
13.SPF(LEAD_EDGE) 0 14.SPF(FRONT/REAR) 0 15.SPF(TRAIL_EDGE) 0
16.CIS(LEAD_EDGE) 0 17.CIS(FRONT/REAR) 0 18.CIS(TRAIL_EDGE) 0
```

Press [START] key. Press [CUSTOM SETTINGS] key.

```
SIMULATION 50-27
ORIGINAL IMAGE LOSS SETTING(FAX/SCN). INPUT 0-10, AND
PRESS START.
1.OC(LEAD_EDGE)
                                                        0
```

Item			Set range	Default
FAX send				
1	OC (LEAD_EDGE)	OC lead edge	0 - 10 (Unit 1mm)	3 (3mm)
2	OC (FRONT/REAR)	OC side		
3	OC (TRAIL_EDGE)	OC rear edge		
4	SPF (LEAD_EDGE)	SPF lead edge		
5	SPF (FRONT/REAR)	SPF side		
6	SPF (TRAIL_EDGE)	SPF rear edge		
7	CIS (LEAD_EDGE)	CIS lead edge		
8	CIS (FRONT/REAR)	CIS side		
9	CIS (TRAIL_EDGE)	CIS rear edge		
Scanner mode				
10	OC (LEAD_EDGE)	OC lead edge	0 - 10 (Unit 1mm)	0 (0mm)
11	OC (FRONT/REAR)	OC side		
12	OC (TRAIL_EDGE)	OC rear edge		
13	SPF (LEAD_EDGE)	SPF lead edge		
14	SPF (FRONT/REAR)	SPF side		
15	SPF (TRAIL_EDGE)	SPF rear edge		
16	CIS (LEAD_EDGE)	CIS lead edge		
17	CIS (FRONT/REAR)	CIS side		
18	CIS (TRAIL_EDGE)	CIS rear edge		

2) Enter the number that corresponds to the fax adjustment item using the numeric keypad.

3) Press the Start key

4) Enter the adjustment value using the numeric keypad.

5) Press the Start key

(The adjustment value should be changed in steps of 1.0mm.)

Scanned images must be visually checked for image loss.

Note: Make adjustments in the same manner as in ADJ 8A and ADJ 8C.

ADJ 9 Adjusting the copied image quality

This adjustment is needed in the following situations:

- The CCD unit has been replaced.
- U2 trouble has occurred.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scanner control PWB has been replaced.
- The EEPROM on the scanner control PWB has been replaced.
- One or more parts of the scanner (reading) section have been replaced.
- One or more consumables (OPC drum, developer, transfer belt) have been replaced.

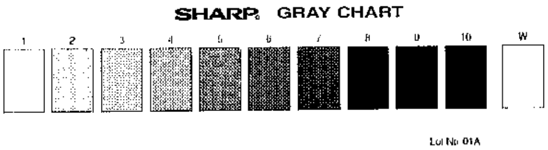
(Copy mode image quality adjustment items)

Image mode		Simulation for adjustment	
		All-mode adjustment	Individual-mode adjustment
Auto mode	Binary mode	46-2	
Text mode	Binary mode		46-9
Text/photo mode	Binary mode		46-10
Photo mode	Binary mode		46-11

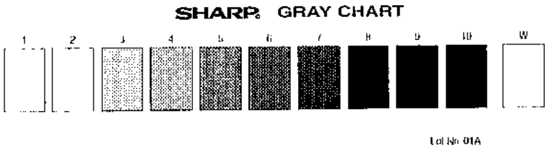
Adjustment items	Simulation for adjustment
Copied image gamma adjustment (copier mode)	46-18
Copied image sharpness adjustment	46-31

(Copied image reference density)

Original



Copy



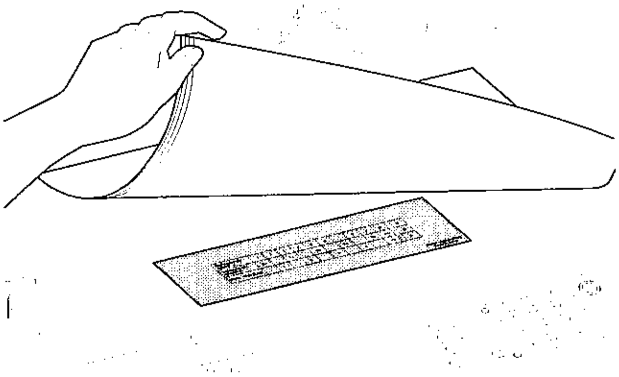
If the copied test chart (UKOG-0162FCZZ) image includes a background copy of patch 3 rather than patch 2, adjust all-copy mode to the image density level specified above.

(Copied image gamma, copied image sharpness)

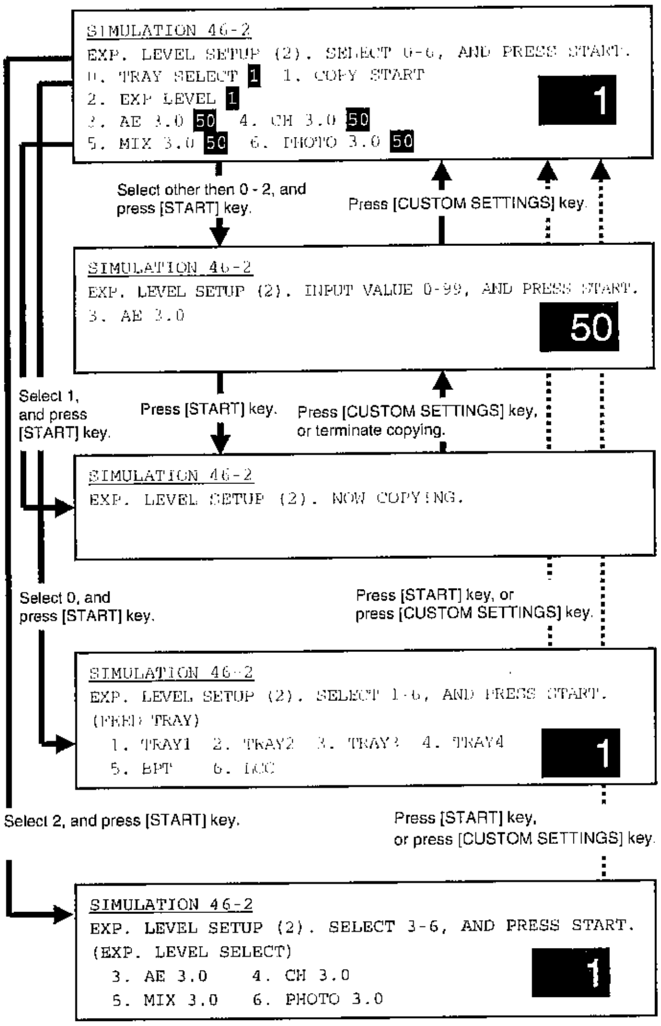
Normally, default settings should be applied to 'copied image gamma' and 'copied image sharpness', but images should be adjusted according to user requests, if any.

ADJ 9A Adjust the binary mode copy density for all modes at once

1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper .



2) Go through the modes specified in Simulation 46-2.



```
SIMULATION 46-2
EXP. LEVEL SETUP (2). SELECT 0-6, AND PRESS START.
0. TRAY SELECT 1  1. COPY START
2. EXP LEVEL 1
3. AE 3.0 50  4. CH 3.0 50
5. MIX 3.0 50  6. PHOTO 3.0 50                    1
```

Select other then 0 - 2, and press [START] key.

Press [CUSTOM SETTINGS] key.

```
SIMULATION 46-2
EXP. LEVEL SETUP (2). INPUT VALUE 0-99, AND PRESS START.
3. AE 3.0                                         50
```

Select 1, and press [START] key.

Press [START] key.

Press [CUSTOM SETTINGS] key, or terminate copying.

```
SIMULATION 46-2
EXP. LEVEL SETUP (2). NOW COPYING.
```

Select 0, and press [START] key.

Press [START] key, or press [CUSTOM SETTINGS] key.

```
SIMULATION 46-2
EXP. LEVEL SETUP (2). SELECT 1-6, AND PRESS START.
(FEED TRAY)
  1. TRAY1  2. TRAY2  3. TRAY3  4. TRAY4
  5. BPT    6. LCC                                 1
```

Select 2, and press [START] key.

Press [START] key, or press [CUSTOM SETTINGS] key.

```
SIMULATION 46-2
EXP. LEVEL SETUP (2). SELECT 3-6, AND PRESS START.
(EXP. LEVEL SELECT)
  3. AE 3.0    4. CH 3.0
  5. MIX 3.0   6. PHOTO 3.0                        1
```

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		

Item			Set range	Default
3	AE 3.0	AE mode	0 - 99	50
4	CH 3.0	Text mode 3.0		
5	MIX 3.0	Text/Photo mode 3.0		
6	PHOTO 3.0	Photo mode 3.0		

3) Using the numeric keypad, select the number that corresponds to the copy mode for which to make adjustments. (Choose from numbers 3 to 6.)
4) Press the Start key
5) Press the Start key (A copy is created.)

   Check the density of the copied image.

   If the copied image density is not at an acceptable level, do the following steps.
6) Adjust the copy density by entering an appropriate value through the numeric keypad.

   A larger value provides higher density.
7) Press the P or Start key

   This applies the adjustment value.

   Pressing the Start key starts copy operation as well as applying the adjustment value.
8) Check the copied image density.

   Repeat steps 6 to 8 until an acceptable copied image density is obtained.

Note: Adjusting the copied image density through this simulation changes the copied image density settings for all copy modes to the copied image density level applied by carrying out this simulation. Also, the copied image density gradient is automatically adjusted to the specified level.

The copied image density settings for individual copy modes adjusted through Simulations 46-9, -10, and -11 are changed to the copied image density level applied by this simulation.

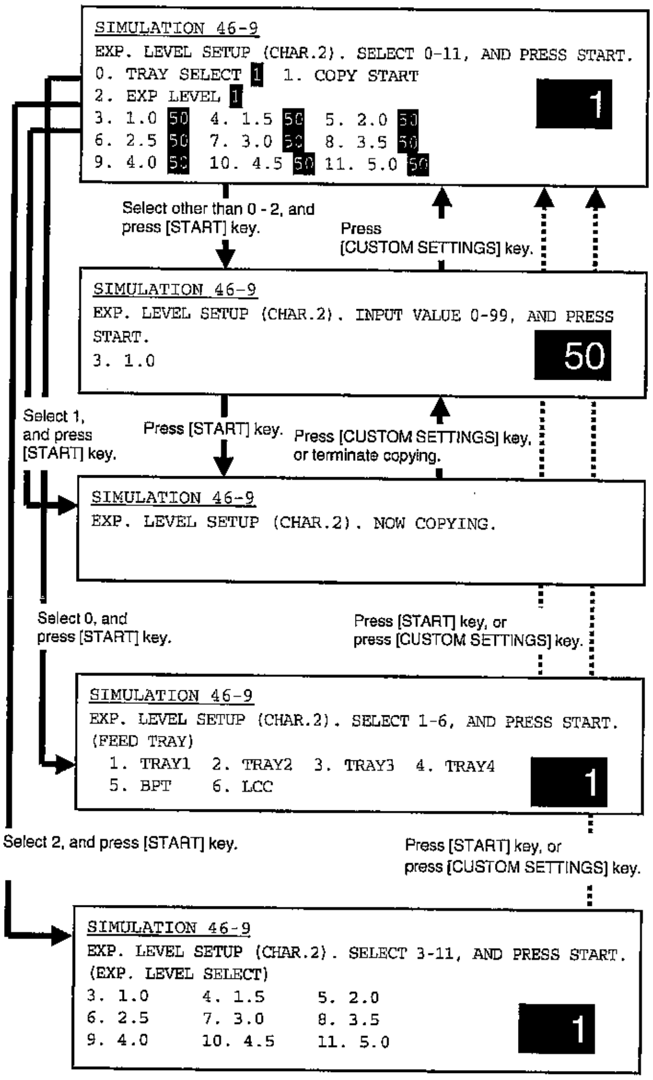
ADJ 9B Adjust the copy density in text binary mode

ADJ 9C Adjust the copy density in text/photo binary mode

ADJ 9D Adjust the copy density in photo binary mode

This adjustment is intended to customize the copied image density settings. The copy density setting for each copy density adjustment level (1 to 5) in manual copy mode can be adjusted to a custom density level.

1) Set the test chart (UKOG-0162FCZZ) on the original table.
2) Go through the simulation modes that correspond to the copy modes for which to adjust the copy density (i.e., the modes specified in Simulations 46-9, -10, or -11).



```
SIMULATION 46-9
EXP. LEVEL SETUP (CHAR.2). SELECT 0-11, AND PRESS START.
0. TRAY SELECT 1  1. COPY START
2. EXP LEVEL 1                                    1
3. 1.0 50  4. 1.5 50  5. 2.0 50
6. 2.5 50  7. 3.0 50  8. 3.5 50
9. 4.0 50  10. 4.5 50 11. 5.0 50
```

```
SIMULATION 46-9
EXP. LEVEL SETUP (CHAR.2). INPUT VALUE 0-99, AND PRESS
START.
3. 1.0                                            50
```

```
SIMULATION 46-9
EXP. LEVEL SETUP (CHAR.2). NOW COPYING.
```

```
SIMULATION 46-9
EXP. LEVEL SETUP (CHAR.2). SELECT 1-6, AND PRESS START.
(FEED TRAY)
  1. TRAY1  2. TRAY2  3. TRAY3  4. TRAY4
  5. BPT    6. LCC                                 1
```

```
SIMULATION 46-9
EXP. LEVEL SETUP (CHAR.2). SELECT 3-11, AND PRESS START.
(EXP. LEVEL SELECT)
3. 1.0     4. 1.5     5. 2.0
6. 2.5     7. 3.0     8. 3.5                       1
9. 4.0     10. 4.5    11. 5.0
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

(SIM 46-9) (Text mode)

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		
3	1.0	Exposure level 1.0	0 - 99	50
4	1.5	Exposure level 1.5		
5	2.0	Exposure level 2.0		
6	2.5	Exposure level 2.5		
7	3.0	Exposure level 3.0		
8	3.5	Exposure level 3.5		
9	4.0	Exposure level 4.0		
10	4.5	Exposure level 4.5		
11	5.0	Exposure level 5.0		

(SIM 46-10) (Text/photo mode)

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		
3	1.0	Exposure level 1.0	0 - 99	50
4	1.5	Exposure level 1.5		
5	2.0	Exposure level 2.0		
6	2.5	Exposure level 2.5		
7	3.0	Exposure level 3.0		
8	3.5	Exposure level 3.5		
9	4.0	Exposure level 4.0		
10	4.5	Exposure level 4.5		
11	5.0	Exposure level 5.0		

(SIM 46-11) (Photo mode)

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		
3	1.0	Exposure level 1.0	0 - 99	50
4	1.5	Exposure level 1.5		
5	2.0	Exposure level 2.0		
6	2.5	Exposure level 2.5		
7	3.0	Exposure level 3.0		
8	3.5	Exposure level 3.5		
9	4.0	Exposure level 4.0		
10	4.5	Exposure level 4.5		
11	5.0	Exposure level 5.0		

3) Using the numeric keypad, select the number that corresponds to the copy density adjustment level. (Choose from numbers 3 to 11.)
4) Press the Start key
5) Press the Start key (A copy is created.)

   If the copied image density is not at an acceptable level, do the following steps.
6) Adjust the copy density by entering an appropriate value through the numeric keypad.

   A larger value provides higher density.
7) Press the P or Start key.

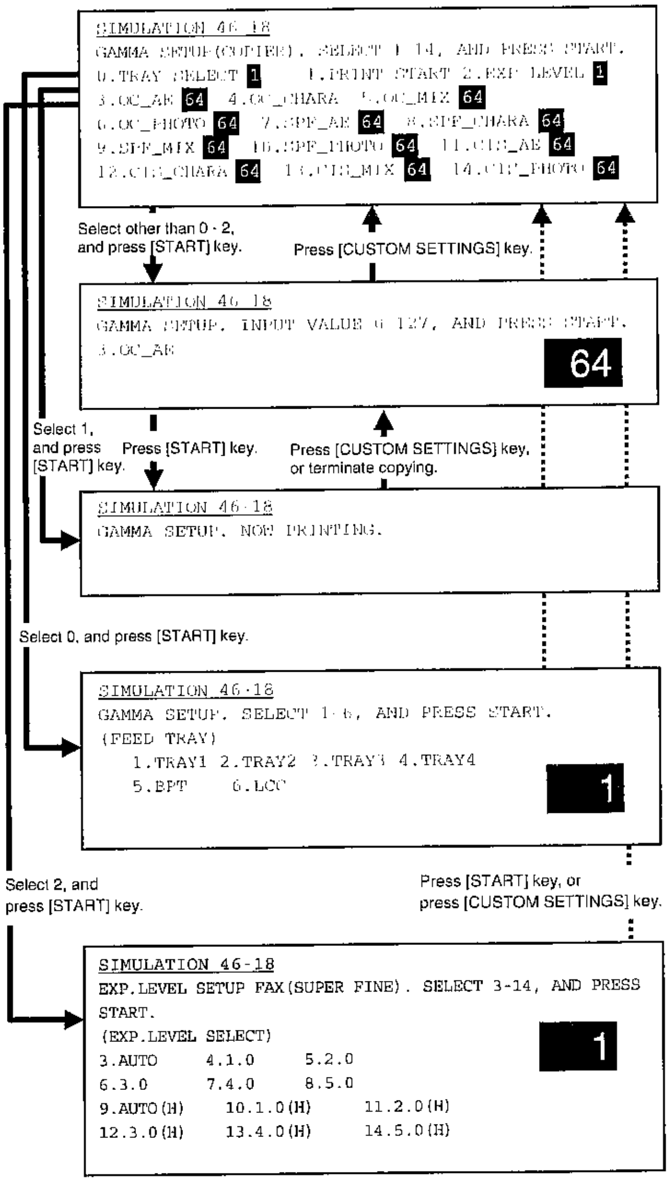
   This applies the adjustment value.

   Pressing the Start key starts copy operation as well as applying the adjustment value.
8) Check the copied image density.

Repeat steps 5 to 9 until an acceptable copied image density is obtained.

ADJ 9E Adjust the copied image gamma in copy mode

1) Set the original on the original table.
2) Go through the modes specified in Simulation 46-18.



```
SIMULATION 46-18
GAMMA SETUP(COPIER). SELECT 1-14, AND PRESS START.
0.TRAY SELECT 1     1.PRINT START 2.EXP LEVEL 1
3.OC_AE 64  4.OC_CHARA  5.OC_MIX 64
6.OC_PHOTO 64  7.SPF_AE 64  8.SPF_CHARA 64
9.SPF_MIX 64  10.SPF_PHOTO 64  11.CIS_AE 64
12.CIS_CHARA 64  13.CIS_MIX 64  14.CIS_PHOTO 64
```

```
SIMULATION 46-18
GAMMA SETUP. INPUT VALUE 0-127, AND PRESS START.
3.OC_AE
                                              64
```

```
SIMULATION 46-18
GAMMA SETUP. NOW PRINTING.
```

```
SIMULATION 46-18
GAMMA SETUP. SELECT 1-6, AND PRESS START.
(FEED TRAY)
  1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
  5.BPT    6.LCC                              1
```

```
SIMULATION 46-18
EXP.LEVEL SETUP FAX(SUPER FINE). SELECT 3-14, AND PRESS
START.
(EXP.LEVEL SELECT)                            1
3.AUTO      4.1.0      5.2.0
6.3.0       7.4.0      8.5.0
9.AUTO(H)     10.1.0(H)     11.2.0(H)
12.3.0(H)     13.4.0(H)     14.5.0(H)
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

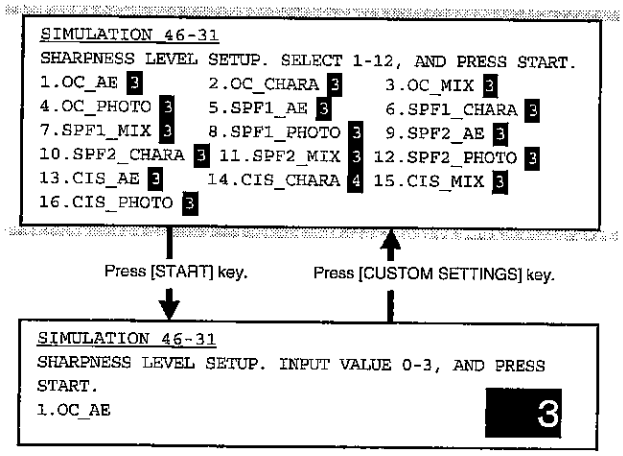
Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	OC_AE	AE mode (OC)	0 - 127	64
4	OC_CHARA	Text mode (OC)		
5	OC_MIX	Text/Photo mode (OC)		
6	OC_PHOTO	Photo mode (OC)		
7	SPF_AE	AE mode (SPF)		
8	SPF_CHARA	Text mode (SPF)		
9	SPF_MIX	Text/Photo mode (SPF)		
10	SPF_PHOTO	Photo mode (SPF)		
11	CIS_AE	AE mode (CIS)		
12	CIS_CHARA	Text mode (CIS)		
13	CIS_MIX	Text/Photo mode (CIS)		
14	CIS_PHOTO	Photo mode (CIS)		

3) Using the numeric keypad, select the number that corresponds to the copy mode for which to make adjustments.
   (Choose from numbers 3 to 14.)
4) Press the Start key
5) Enter the gamma adjustment value using the numeric keypad.
   A larger value provides larger gamma gradient and higher image contrast.
6) Press the P or Start key
   Pressing the Start key starts copy (print) operation as well as applying the adjustment value.
7) Check the copied image gamma (copy density levels for low and high density areas) (contrast).

Repeat steps 5 to 7 until an acceptable copied image is obtained.

ADJ 9F Adjust the copied image sharpness

1) Set the original on the original table.
2) Go through the modes specified in Simulation 46-31.



```
SIMULATION 46-31
SHARPNESS LEVEL SETUP. SELECT 1-12, AND PRESS START.
1.OC_AE 3         2.OC_CHARA 3      3.OC_MIX 3
4.OC_PHOTO 3      5.SPF1_AE 3       6.SPF1_CHARA 3
7.SPF1_MIX 3      8.SPF1_PHOTO 3    9.SPF2_AE 3
10.SPF2_CHARA 3 11.SPF2_MIX 3 12.SPF2_PHOTO 3
13.CIS_AE 3       14.CIS_CHARA 4 15.CIS_MIX 3
16.CIS_PHOTO 3
```

```
SIMULATION 46-31
SHARPNESS LEVEL SETUP. INPUT VALUE 0-3, AND PRESS
START.
1.OC_AE                                         3
```

Item			Set range	Default
1	OC_AE	AE mode (OC)	1 - 5	3
2	OC_CHARA	Text mode (OC)		
3	OC_MIX	Text/Photo mode (OC)		
4	OC_PHOTO	Photo mode (OC)		
5	SPF1_AE	AE mode (SPF1)		
6	SPF1_CHARA	Text mode (SPF1)		
7	SPF1_MIX	Text/Photo mode (SPF1)		
8	SPF1_PHOTO	Photo mode (SPF1)		
9	SPF2_AE	AE mode (SPF2)		
10	SPF2_CHARA	Text mode (SPF2)		
11	SPF2_MIX	Text/Photo mode (SPF2)		
12	SPF2_PHOTO	Photo mode (SPF2)		
⚠ 13	CIS_AE	AE mode (CIS)	1 - 5	4
14	CIS_CHARA	Text mode (CIS)	1 - 5	3
15	CIS_MIX	Text/Photo mode (CIS)		
16	CIS_PHOTO	Photo mode (CIS)		

3) Using the numeric keypad, select the number that corresponds to the copy mode for which to make adjustments.
   (Choose from numbers 1 to 16.)
4) Press the Start key
5) Adjust the sharpness by entering an appropriate value through the numeric keypad.
   A larger value provides higher sharpness.
6) Press the P or Start key
   Pressing the Start key starts copy (print) operation as well as applying the adjustment value.
7) Check the copied image sharpness.

Repeat steps 5 to 7 until an acceptable copied image is obtained.

ADJ 10 Adjusting the print quality in fax mode

This adjustment is needed in the following situations:

- The CCD unit has been replaced.
- U2 trouble has occurred.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scanner control PWB has been replaced.
- The EEPROM on the scanner control PWB has been replaced.
- One or more parts of the scanner (reading) section have been replaced.

(Fax mode image density adjustment items)

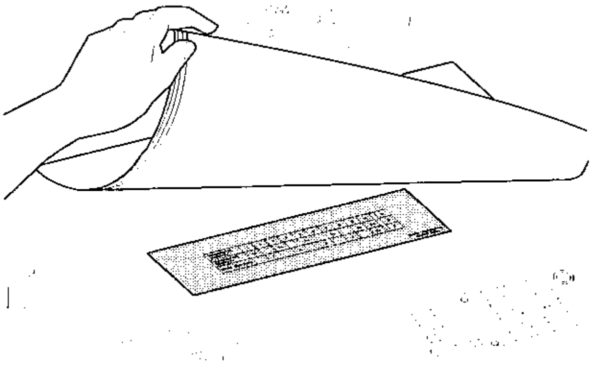
Image mode			Simulation for adjustment	
			All-mode adjustment	Individual-mode adjustment
Fax mode print density adjustment (standard mode)	Auto mode	Binary mode	46-12	46-13
	Manual	Binary mode		
Fax mode print density adjustment (small-character mode)	Auto mode	Binary mode		46-14
		Half tone mode		
	Manual	Binary mode		
		Half tone mode		
Fax mode print density adjustment (fine mode)	Auto mode	Binary mode		46-15
		Half tone mode		
	Manual	Binary mode		
		Half tone mode		
Fax mode print density adjustment (super fine mode)	Auto mode	Binary mode		46-16
		Half tone mode		
	Manual	Binary mode		
		Half tone mode		
Fax mode print density adjustment (600dpi mode)	Auto mode	Binary mode		46-45
		Half tone mode		
	Manual	Binary mode		
		Half tone mode		

(Fax mode density)

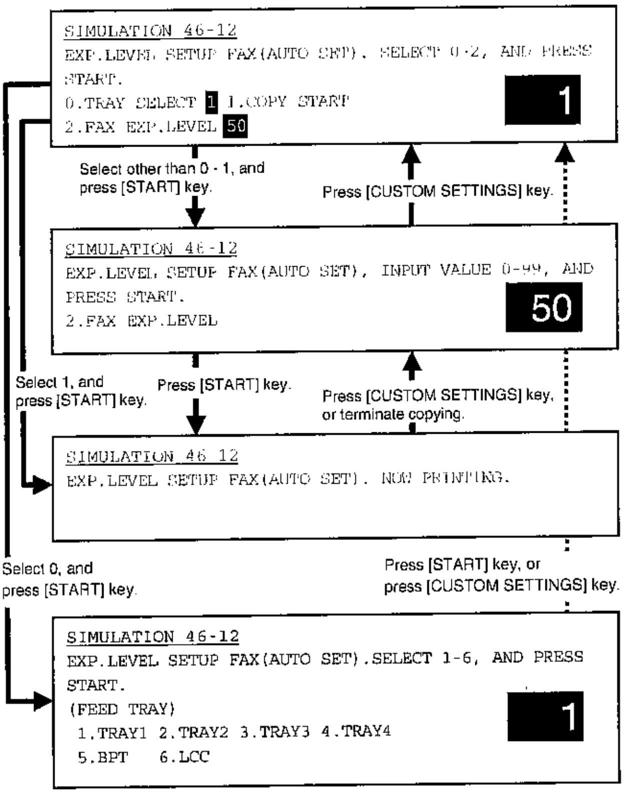
The print density settings should be normally left at defaults but should be adjusted according to user requests, if any.

ADJ 10A Adjust the fax mode print density for all modes at once

1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper .



2) Go through the modes specified in Simulation 46-12.


Select other than 0 - 1, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

```
SIMULATION 46-12
EXP.LEVEL SETUP FAX(AUTO SET). SELECT 0-2, AND PRESS
START.
0.TRAY SELECT 1 1.COPY START                        1
2.FAX EXP.LEVEL 50
```

```
SIMULATION 46-12
EXP.LEVEL SETUP FAX(AUTO SET), INPUT VALUE 0-99, AND
PRESS START.                                        50
2.FAX EXP.LEVEL
```

```
SIMULATION 46-12
EXP.LEVEL SETUP FAX(AUTO SET). NOW PRINTING.
```

```
SIMULATION 46-12
EXP.LEVEL SETUP FAX(AUTO SET).SELECT 1-6, AND PRESS
START.
(FEED TRAY)                                         1
 1.TRAY1  2.TRAY2  3.TRAY3  4.TRAY4
 5.BPT    6.LCC
```

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	COPY START	Copy START (Default)		
2	FAX EXP. LEVEL	FAX mode print density	0 - 99	50

3) Select the adjustment item (FAX EXP. LEVEL) using the numeric keypad.
4) Press the Start key.
5) Press the Start key (A copy is created.)

   Check the print density.

   If the print density is not at an acceptable level, do the following steps.
6) Enter the print adjustment value using the numeric keypad.
7) Press the P or Start key

   This applies the adjustment value.

   Pressing the Start key starts print operation as well as applying the adjustment value.
8) Check the print density.

Repeat steps 6 to 8 until an acceptable print density is obtained.

Note: Adjusting the Fax print density through this simulation changes the print density settings for all Fax modes to the density level applied by carrying out this simulation.

The Fax mode print density settings for individual Fax modes adjusted through Simulations 46-13, -14, -15, -16 and -45 are changed to the print density level applied by this simulation.

ADJ 10B Adjust the fax mode print density in standard mode

ADJ 10C Adjust the fax mode print density in small-character mode

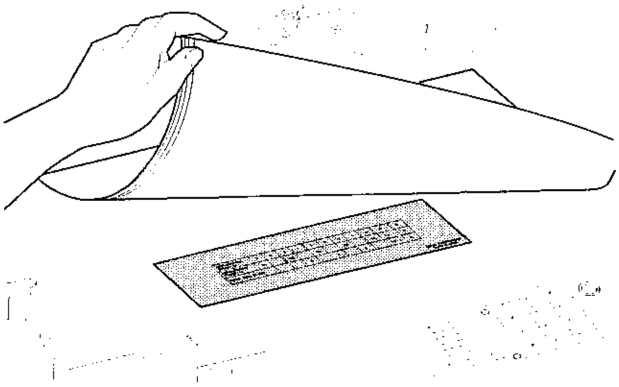
ADJ 10D Adjust the fax mode print density in fine mode

ADJ 10E Adjust the fax mode print density in super fine mode

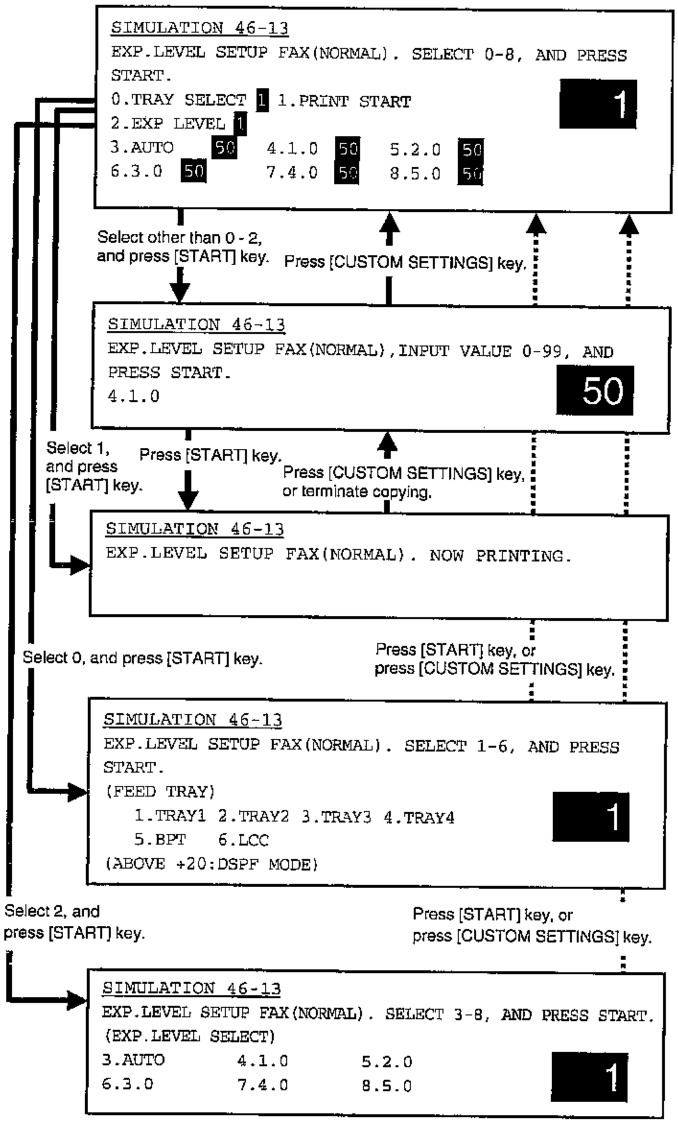
ADJ 10F Adjust the fax mode print density in 600dpi mode

This adjustment is intended to the print mode for each Fax mode individually. In manual mode, the print density setting for each print density adjustment level (1 to 5) can be adjusted to a custom density level.

1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper .



2) Go through the simulation modes that correspond to the Fax modes for which to adjust the print density (i.e., the modes specified in Simulations 46-13, -14, -15, -16, or -45).



```
SIMULATION 46-13
EXP.LEVEL SETUP FAX(NORMAL). SELECT 0-8, AND PRESS
START.
0.TRAY SELECT 1 1.PRINT START                      1
2.EXP LEVEL 1
3.AUTO   50    4.1.0 50     5.2.0 50
6.3.0 50       7.4.0 50     8.5.0 50
```

```
SIMULATION 46-13
EXP.LEVEL SETUP FAX(NORMAL),INPUT VALUE 0-99, AND
PRESS START.
4.1.0                                              50
```

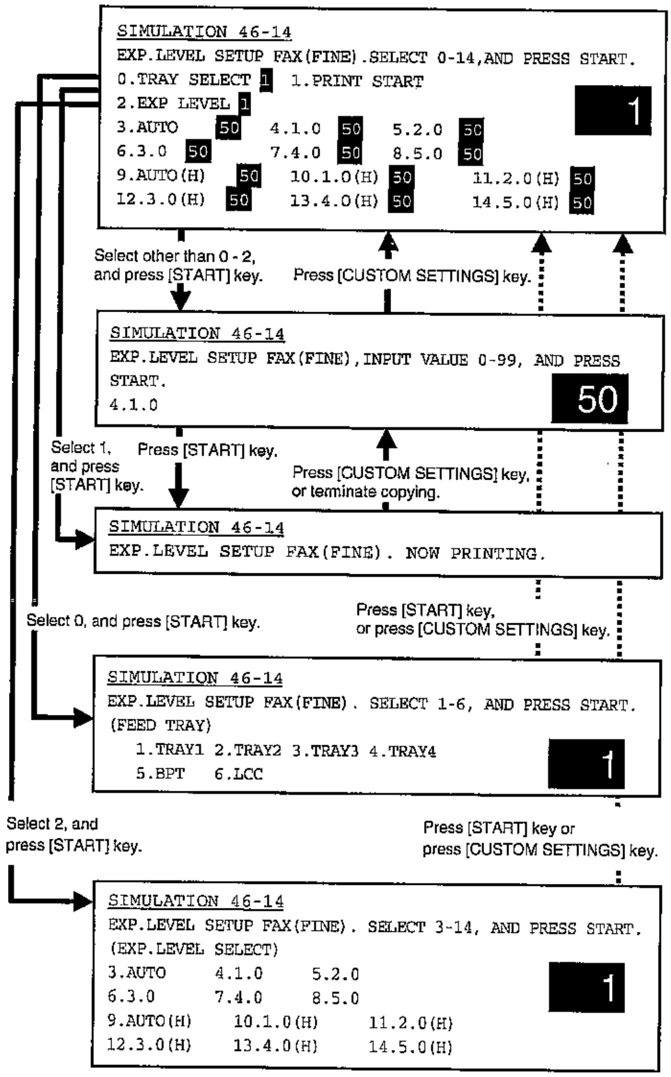
```
SIMULATION 46-13
EXP.LEVEL SETUP FAX(NORMAL). NOW PRINTING.
```

```
SIMULATION 46-13
EXP.LEVEL SETUP FAX(NORMAL). SELECT 1-6, AND PRESS
START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4                 1
   5.BPT   6.LCC
(ABOVE +20:DSPF MODE)
```

```
SIMULATION 46-13
EXP.LEVEL SETUP FAX(NORMAL). SELECT 3-8, AND PRESS START.
(EXP.LEVEL SELECT)
3.AUTO        4.1.0       5.2.0                    1
6.3.0         7.4.0       8.5.0
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	AUTO	Auto	0 - 99	50
4	1.0	Exposure level 1		
5	2.0	Exposure level 2		
6	3.0	Exposure level 3		
7	4.0	Exposure level 4		
8	5.0	Exposure level 5		



```
SIMULATION 46-14
EXP.LEVEL SETUP FAX(FINE).SELECT 0-14,AND PRESS START.
0.TRAY SELECT 1  1.PRINT START
2.EXP LEVEL 1                                          1
3.AUTO      50   4.1.0 50      5.2.0 50
6.3.0 50         7.4.0 50      8.5.0 50
9.AUTO(H)    50   10.1.0(H) 50      11.2.0(H) 50
12.3.0(H)   50    13.4.0(H) 50      14.5.0(H) 50
```

```
SIMULATION 46-14
EXP.LEVEL SETUP FAX(FINE),INPUT VALUE 0-99, AND PRESS
START.
4.1.0                                              50
```

```
SIMULATION 46-14
EXP.LEVEL SETUP FAX(FINE). NOW PRINTING.
```

```
SIMULATION 46-14
EXP.LEVEL SETUP FAX(FINE). SELECT 1-6, AND PRESS START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4                 1
   5.BPT   6.LCC
```

```
SIMULATION 46-14
EXP.LEVEL SETUP FAX(FINE). SELECT 3-14, AND PRESS START.
(EXP.LEVEL SELECT)
3.AUTO       4.1.0      5.2.0
6.3.0        7.4.0      8.5.0                      1
9.AUTO(H)    10.1.0(H)     11.2.0(H)
12.3.0(H)    13.4.0(H)     14.5.0(H)
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	AUTO	Auto	0 - 99	50
4	1.0	Exposure level 1		
5	2.0	Exposure level 2		
6	3.0	Exposure level 3		
7	4.0	Exposure level 4		
8	5.0	Exposure level 5		
9	AUTO (H)	Auto (Half-tone)		
10	1.0 (H)	Exposure level 1 (Half-tone)		
11	2.0 (H)	Exposure level 2 (Half-tone)		
12	3.0 (H)	Exposure level 3 (Half-tone)		
13	4.0 (H)	Exposure level 4 (Half-tone)		
14	5.0 (H)	Exposure level 5 (Half-tone)		

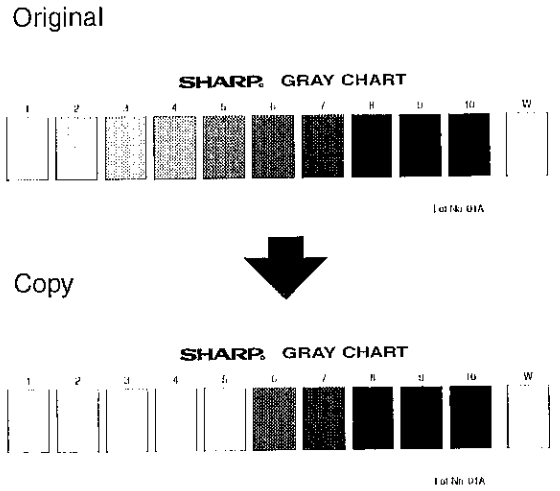
3) Using the numeric keypad, select the number that corresponds to the adjustment item. Choose from numbers 3 to 8 (14).
   - Auto mode
   - Manual mode (print density adjustment level)

   For manual mode, select the number that corresponds to the print density level (1 to 5). (Choose from numbers (4 to 8) (10-14)).
4) Press the Start key
5) Press the Start key. (A copy is created.)

⚠: Feb. 9 2004

⚠ (Binary mode)

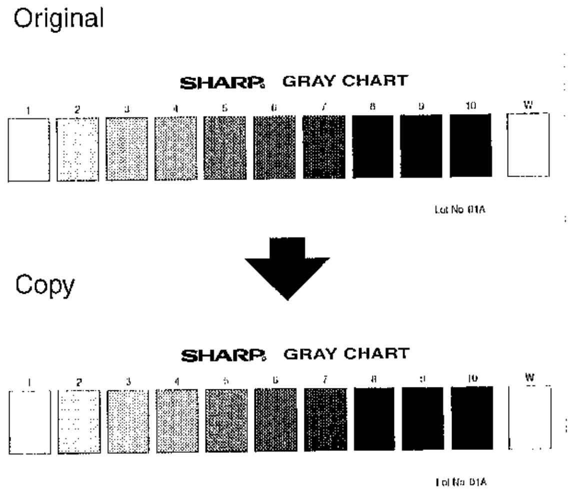
(Copy image reference density)



If the copied test chart (UKOG-0162FCZZ) image includes a background copy of patch 6 rather than patch 5, adjust all-copy mode to the image density level specified above.

(Half tone mode)

(Copy image reference density)



If the copied test chart (UKOG-0162FCZZ) image includes a background copy of patch 2 rather than patch 1, adjust all-copy mode to the image density level specified above.

If the print density is not at an acceptable level, do the following steps.

6) Adjust the print density by entering an appropriate value through the numeric keypad.

   A larger value provides higher density.

7) Press the P or Start key

   This applies the adjustment value.

   Pressing the Start key starts print operation as well as applying the adjustment value.

8) Check the printed image density.

Repeat steps 6 to 8 until an acceptable image density is obtained.

ADJ 11 Adjusting the image quality in scan mode

This adjustment is needed in the following situations:

- The CCD unit has been replaced.
- U2 trouble has occurred.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scanner control PWB has been replaced.
- The EEPROM on the scanner control PWB has been replaced.
- One or more parts of the scanner (reading) section have been replaced.

(Scan mode image quality adjustment items)

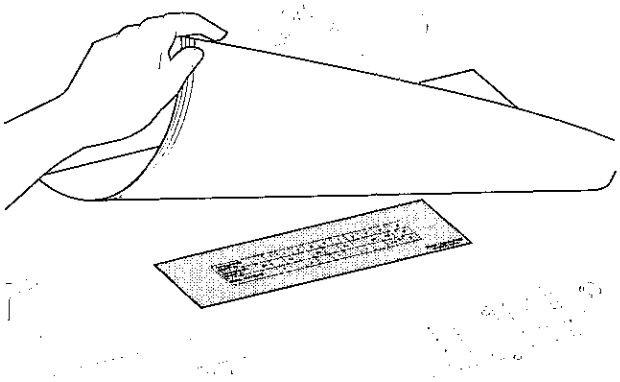
Image mode			Simulation for adjustment	
			All-mode adjustment	Individual-mode adjustment
Scan mode image density adjustment/ individual setup (standard mode)	Auto	Binary mode	46-21	46-22
	Manual	Binary mode		
Scan mode image density adjustment/ individual setup (small-character mode)	Auto	Binary mode		46-23
		Half tone mode		
	Manual	Binary mode		
		Half tone mode		
Scan mode image density adjustment/ individual setup (fine mode)	Auto	Binary mode		46-24
		Half tone mode		
	Manual	Binary mode		
		Half tone mode		
Scan mode image density adjustment/ individual setup (super fine mode)	Auto	Binary mode		46-25
		Half tone mode		
	Manual	Binary mode		
		Half tone mode		

(Scan mode image quality)

The image density settings should be normally left at defaults but should be adjusted according to user requests, if any.

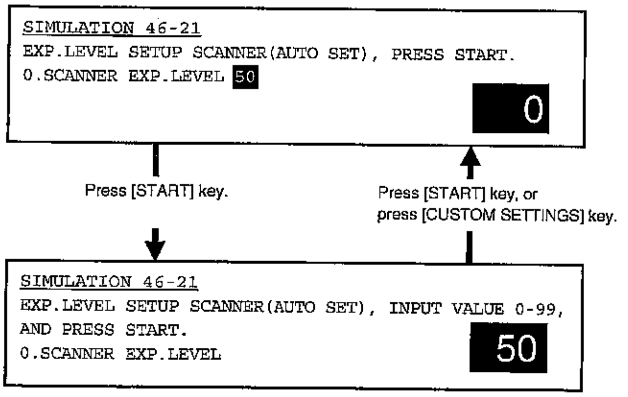
ADJ 11A Adjust the scan mode image density for all modes at once

1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper.



⚠: Feb. 9 2004

1) Go through the modes specified in Simulation 46-21.



```
SIMULATION 46-21
EXP.LEVEL SETUP SCANNER(AUTO SET), PRESS START.
0.SCANNER EXP.LEVEL 50
                                              0
```

```
SIMULATION 46-21
EXP.LEVEL SETUP SCANNER(AUTO SET), INPUT VALUE 0-99,
AND PRESS START.
0.SCANNER EXP.LEVEL                          50
```

Item			Set range	Default
0	SCANNER EXP. LEVEL	Image density level	0 - 99	50

2) Select the adjustment item SCANNER EXP. LEVEL using the numeric keypad.

3) Press the Start key

4) Enter the image density adjustment value.

5) Press the P or Start key

Note: Adjusting the scanned image density through this simulation changes the image density settings for all scan modes to the image density level applied by carrying out this simulation.

The scan-mode image density settings for individual scan modes adjusted through Simulations 46-22, -23, -24, -25, and -45 are changed to the image density level applied by this simulation.

Scanned images must be visually checked to ensure the post-adjustment image density.

ADJ 11B Scan mode image density adjustment/ individual setup (standard mode)

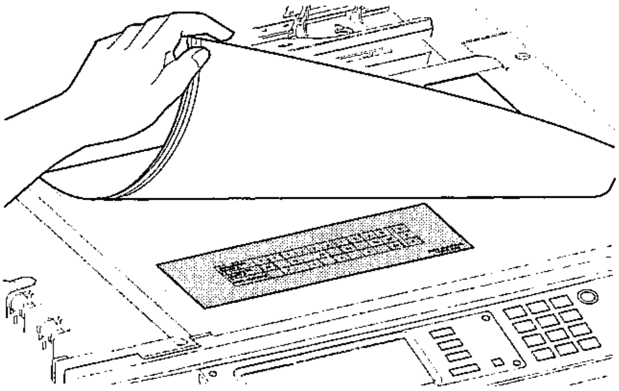
ADJ 11C Scan mode image density adjustment/ individual setup (small-character mode)

ADJ 11D Scan mode image density adjustment/ individual setup (fine mode)

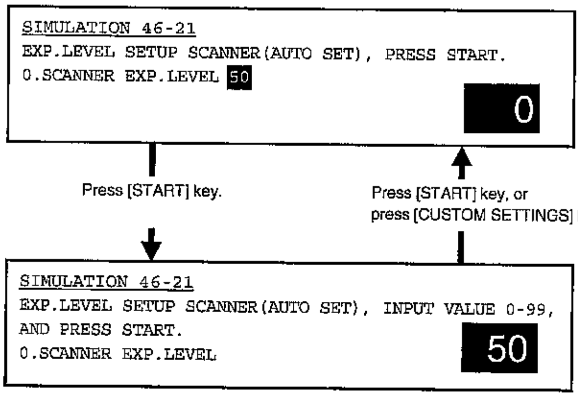
ADJ 11E Scan mode image density adjustment/ individual setup (super fine mode)

This adjustment is intended to the image mode for each scan mode individually. In manual mode, the image density setting for each scanned image density adjustment level (1 to 5) can be adjusted to a custom density level.

1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper.



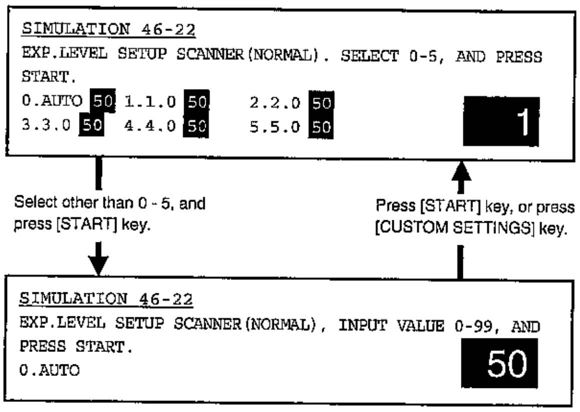
⚠ 2) Go through the simulation modes that correspond to the scan modes for which to adjust the scanned image density (i.e., the modes specified in Simulations 46-22, -23, -24, or -25).



```
SIMULATION 46-21
EXP.LEVEL SETUP SCANNER(AUTO SET), PRESS START.
0.SCANNER EXP.LEVEL 50
                                              0
```

```
SIMULATION 46-21
EXP.LEVEL SETUP SCANNER(AUTO SET), INPUT VALUE 0-99,
AND PRESS START.
0.SCANNER EXP.LEVEL                          50
```

Item			Set range	Default
0	SCANNER EXP. LEVEL	Image density level	0 - 99	50



```
SIMULATION 46-22
EXP.LEVEL SETUP SCANNER(NORMAL). SELECT 0-5, AND PRESS
START.
0.AUTO 50 1.1.0 50    2.2.0 50
3.3.0 50  4.4.0 50    5.5.0 50                1
```

Select other than 0 - 5, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

```
SIMULATION 46-22
EXP.LEVEL SETUP SCANNER(NORMAL), INPUT VALUE 0-99, AND
PRESS START.
0.AUTO                                        50
```

Item			Set range	Default
0	AUTO	Auto	0 - 99	50
1	1.0	Exposure level 1		
2	2.0	Exposure level 2		
3	3.0	Exposure level 3		
4	4.0	Exposure level 4		
5	5.0	Exposure level 5		

3) Enter the number that corresponds to the following adjustment item using the numeric keypad. (Choose from numbers 0 to 5.)
- Auto mode
- Manual mode (print density adjustment level)

For manual mode, select the number that corresponds to the image density adjustment level (1 to 5). (Choose from numbers 1 to 5.)

6) Press the Start key

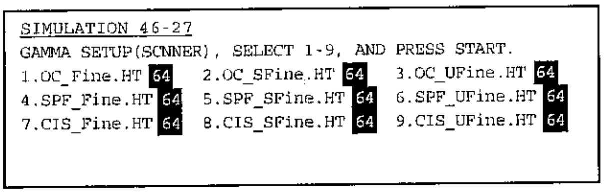
7) Enter the image density adjustment value.

8) Press the P or Start key

Scanned images must be visually checked to ensure the post-adjustment image density.

ADJ 11F Adjust the image gamma in scanner mode

1) Go through the modes specified in Simulation 46-27.



```
SIMULATION 46-27
GAMMA SETUP(SCNNER), SELECT 1-9, AND PRESS START.
1.OC_Fine.HT 64   2.OC_SFine.HT 64   3.OC_UFine.HT 64
4.SPF_Fine.HT 64  5.SPF_SFine.HT 64  6.SPF_UFine.HT 64
7.CIS_Fine.HT 64  8.CIS_SFine.HT 64  9.CIS_UFine.HT 64
```

Item		
1	OC_Fine.HT	Fine text (Half-tone) (OC)
2	OC_SFine.HT	Super fine (Half-tone) (OC)
3	OC_UFine.HT	Ultra fine (Half-tone) (OC)
4	SPF_Fine.HT	Fine text (Half-tone) (SPF)
5	SPF_SFine.HT	Super fine (Half-tone) (SPF)
6	SPF_UFine.HT	Ultra fine (Half-tone) (SPF)
7	CIS_Fine.HT	Fine text (Half-tone) (CIS)
8	CIS_SFine.HT	Super fine (Half-tone) (CIS)
9	CIS_UFine.HT	Ultra fine (Half-tone) (CIS)

2) Using the numeric keypad, select the number that corresponds to the scan mode for which to make adjustments.

4) Press the Start key

5) Adjust the gamma by entering an appropriate value through the numeric keypad.

   A larger value provides larger gamma gradient and higher image contrast.

6) Press the Start key

   This applies the adjustment value.

Scanned images must be visually checked to ensure the post-adjustment image gamma.

ADJ 12 Common image quality adjustments for all of copy, scan, and fax modes

(Common image quality adjustment items for all of copy, scan, and fax modes)

Adjustment items	Simulation for adjustment
Original table mode/SPF mode image density correction	46-20
(Auto mode operation spec setting for copy, scan, and fax)	46-19

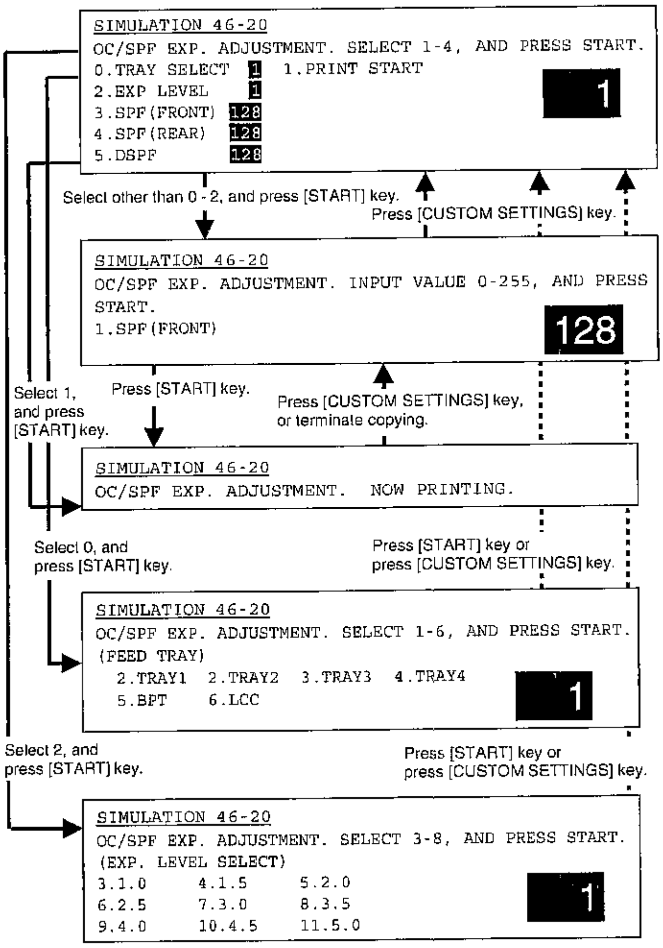
⚠ ADJ 12A Correct the image density in original table mode/SPF mode (Copy mode)

⚠ Used to adjust the copy density correction in the SPF copy mode for the document table copy mode. The adjustment is made so that the copy density becomes the same as that of the document table copy mode.

This adjustment is needed in the following situations:

- The CCD unit has been replaced.
- U2 trouble has occurred.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scanner control PWB has been replaced.
- The EEPROM on the scanner control PWB has been replaced.
- One or more parts of the scanner (reading) section have been replaced.
- The CIS unit has been removed.
- The CIS unit has been replaced.
- The SPF unit has been removed.
- The SPF unit has been replaced.

1) Go through the modes specified in Simulation 46-20.



```
SIMULATION 46-20
OC/SPF EXP. ADJUSTMENT. SELECT 1-4, AND PRESS START.
0.TRAY SELECT  1   1.PRINT START
2.EXP LEVEL    1                                1
3.SPF(FRONT) 128
4.SPF(REAR)  128
5.DSPF       128
```

```
SIMULATION 46-20
OC/SPF EXP. ADJUSTMENT. INPUT VALUE 0-255, AND PRESS
START.
1.SPF(FRONT)                                  128
```

```
SIMULATION 46-20
OC/SPF EXP. ADJUSTMENT.  NOW PRINTING.
```

```
SIMULATION 46-20
OC/SPF EXP. ADJUSTMENT. SELECT 1-6, AND PRESS START.
(FEED TRAY)
  2.TRAY1  2.TRAY2  3.TRAY3  4.TRAY4
  5.BPT    6.LCC                                1
```

```
SIMULATION 46-20
OC/SPF EXP. ADJUSTMENT. SELECT 3-8, AND PRESS START.
(EXP. LEVEL SELECT)
3.1.0     4.1.5     5.2.0
6.2.5     7.3.0     8.3.5                        1
9.4.0     10.4.5    11.5.0
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.

⚠

	Item	Content	Set range	Default
0	TRAY SELECT	Paper feed tray selection 1: TRAY1 2: TRAY2 3: TRAY3 4: TRAY4 5: Manual feed 6: Side LCC	–	–
1	PRINT START	Print start (Default)	–	–
2	EXP LEVEL	Exposure level selection 3: Exposure level 1.0 4: Exposure level 1.5 5: Exposure level 2.0 6: Exposure level 2.5 7: Exposure level 3.0 8: Exposure level 3.5 9: Exposure level 4.0 10: Exposure level 4.5 11: Exposure level 5.0	–	–
3	SPF (FRONT)	SPF (front) (front frame side)	0 - 255	128
4	SPF (REAR)	SPF (front) (rear frame side)		
5	DSPF	DSPF (Back surface)		

2) Using the numeric keypad, enter the number that corresponds to the mode for which to make adjustments.
   SPF front frame side (front face copy), SPF rear frame side (front face copy), SPF (back side copy) (Choose from numbers 3 to 5.)
3) Press the Start key
4) Enter the density correction value using the numeric keypad.
5) Press the P or Start key
6) Make two copies (one in original table mode and the other in SPF mode) and compare the copies in terms of density.

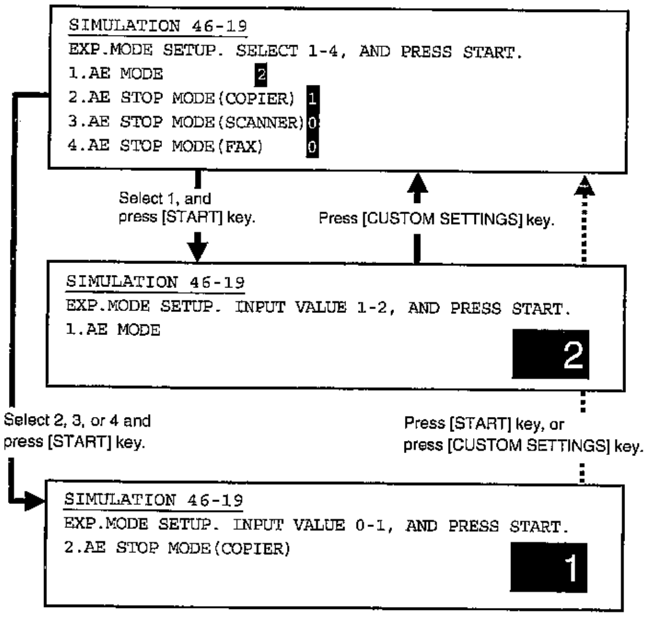
Repeat steps 4 to 6 until both copies provide the same density.

ADJ 12B Set up the auto mode operation for copy, scan, and fax

This adjustment is needed in the following situations:

- U2 trouble has occurred.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scanner control PWB has been replaced.
- The EEPROM on the scanner control PWB has been replaced.

1) Go through the modes specified in Simulation 46-19.



```
SIMULATION 46-19
EXP.MODE SETUP. SELECT 1-4, AND PRESS START.
1.AE MODE                2
2.AE STOP MODE(COPIER)   1
3.AE STOP MODE(SCANNER)  0
4.AE STOP MODE(FAX)      0
```

```
SIMULATION 46-19
EXP.MODE SETUP. INPUT VALUE 1-2, AND PRESS START.
1.AE MODE
                                                2
```

```
SIMULATION 46-19
EXP.MODE SETUP. INPUT VALUE 0-1, AND PRESS START.
2.AE STOP MODE(COPIER)
                                                1
```

Select 1, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 2, 3, or 4 and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

Mode	Set value	Item	Default
AE mode	1	Image quality priority mode (Normal mode) * Gamma is sharp to provide high contrast images.	1 (Japan) 2 (EX Japan)
	2	Toner consumption priority mode * Gamma is mild to provide low contrast images.	
AE fixed mode	0	AE fixed OFF	1 (COPIER) 0 (SCANNER/ FAX)
	1	AE fixed ON	

1) Select "1 AE MODE" using the numeric keypad.
2) Press the Start key
3) Using the numeric keypad, select the number that corresponds to the operation spec.
4) Press the Start key.
   Pressing the Start key applies the setting.

(Auto copy mode operation setting)

1) Using the numeric keypad, select the number that corresponds to the mode for which to make adjustments. (Choose from numbers 2 to 4.)
2) Press the Start key
3) Using the numeric keypad, select the number that corresponds to the operation mode.
4) Press the Start key.

AE fix OFF: Density (exposure) is automatically controlled on a real time basis. (The density level is dynamically changed according to the original's pattern.)

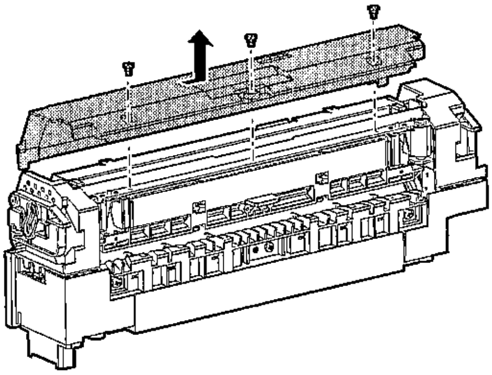
AE fix ON: The density of the leading edge of the original is detected and used to determine the overall density (exposure) level. (The overall density level is fixed.)

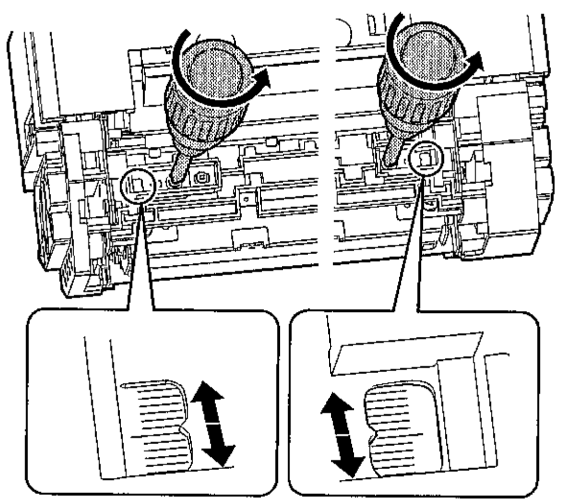
ADJ 13 Adjusting the fusing paper guide position

This adjustment is needed in the following situations:

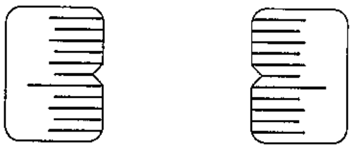
- Paper is jammed in or around the fusing section.
- Imperfect images, deformed images, or wrinkles are produced in the paper lead edge section or the rear edge section.

Adjust the fusing paper guide position by loosening the fusing paper guide fixing screws and the sliding the fusing paper guide in the arrow direction.





When shipping, it is fixed to the position which is one scale (0.5mm) over the center.



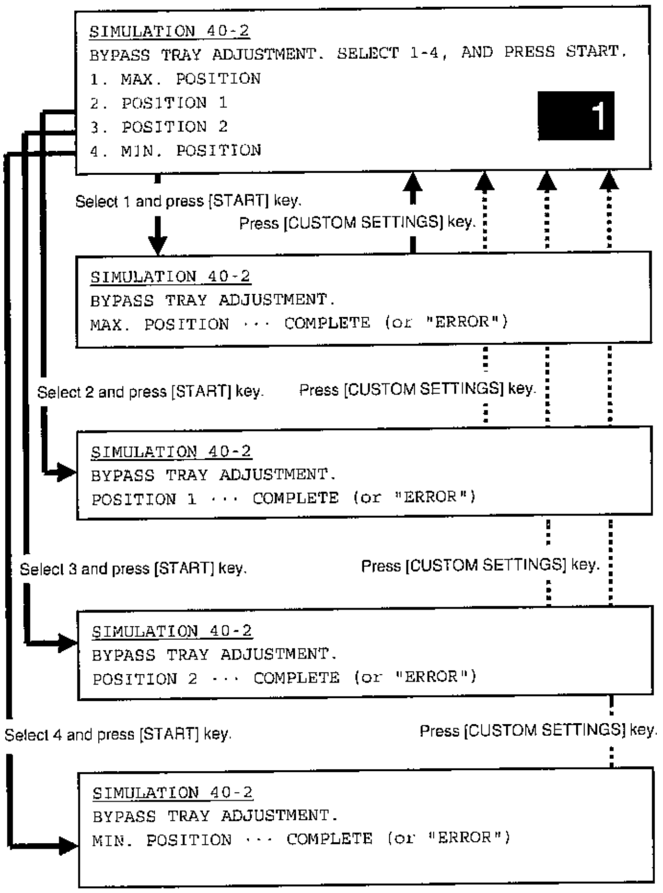
ADJ 14 Adjusting the paper size detection

ADJ 14A Adjust the paper width sensor for the manual paper feed tray

This adjustment is needed in the following situations:

- The manual paper feed tray section has been disassembled.
- The manual paper feed tray unit has been replaced.
- U2 trouble has occurred.
- The PCU PWB has been replaced.
- The EEPROM on the PCU PWB has been replaced.

1) Go through the modes specified in Simulation 40-2.



```
SIMULATION 40-2
BYPASS TRAY ADJUSTMENT. SELECT 1-4, AND PRESS START.
1. MAX. POSITION
2. POSITION 1
3. POSITION 2                                        1
4. MIN. POSITION
```

Select 1 and press [START] key.
Press [CUSTOM SETTINGS] key.

```
SIMULATION 40-2
BYPASS TRAY ADJUSTMENT.
MAX. POSITION ··· COMPLETE (or "ERROR")
```

Select 2 and press [START] key.
Press [CUSTOM SETTINGS] key.

```
SIMULATION 40-2
BYPASS TRAY ADJUSTMENT.
POSITION 1 ··· COMPLETE (or "ERROR")
```

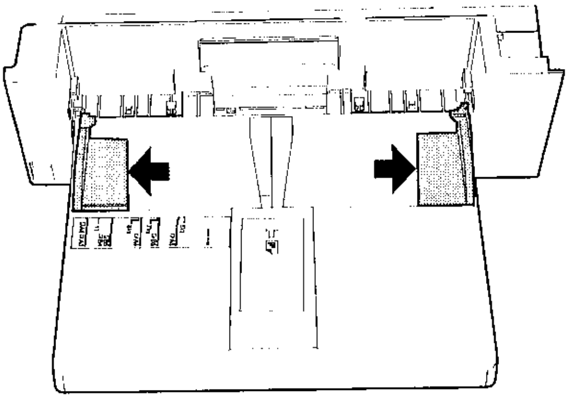
Select 3 and press [START] key.
Press [CUSTOM SETTINGS] key.

```
SIMULATION 40-2
BYPASS TRAY ADJUSTMENT.
POSITION 2 ··· COMPLETE (or "ERROR")
```

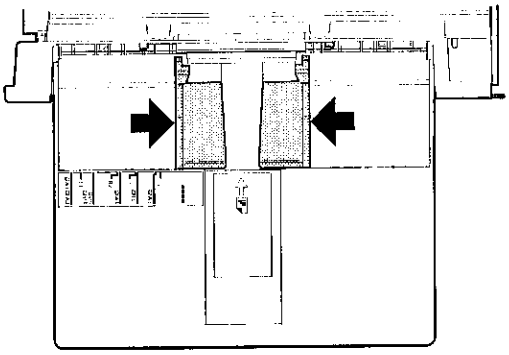
Select 4 and press [START] key.
Press [CUSTOM SETTINGS] key.

```
SIMULATION 40-2
BYPASS TRAY ADJUSTMENT.
MIN. POSITION ··· COMPLETE (or "ERROR")
```

2) Open the manual paper feed guide to the maximum width position.
3) Select MAX. POSITION using the numeric keypad.



4) Press the Start key.
The maximum width detection level is recognized.
5) Press the CUSTOM SETTINGS key.
6) Set the manual paper feed guide to the width for the A4R size.
7) Select POSITION 1 using the numeric keypad.
8) Press the Start key
The A4R width detection level is recognized.
9) Press the CUSTOM SETTINGS key.
10) Set the manual paper feed guide to the width for the A5R size.
11) Select POSITION 2 using the numeric keypad.
12) Press the Start key.
The A5R width detection level is recognized.
13) Press the CUSTOM SETTINGS key.
14) Open the manual paper feed guide to the minimum width position.



15) Select MIN. POSITION using the numeric keypad.
16) Press the Start key
The minimum width detection level is recognized.

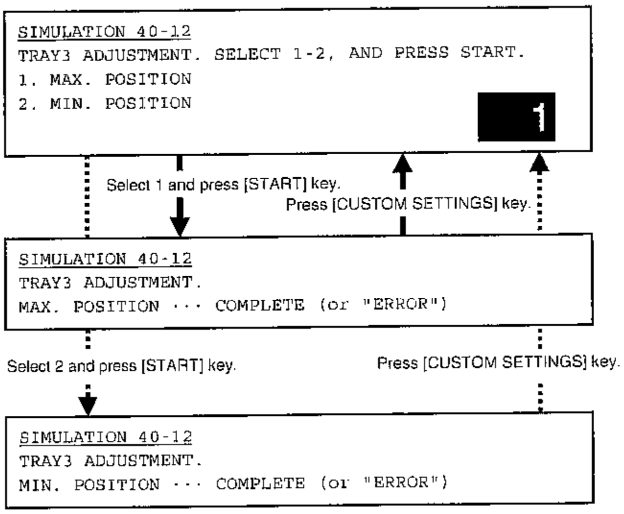
Note: When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

ADJ 14B Adjust the paper width sensor for paper feed tray 3

This adjustment is needed in the following situations:

- The paper feed tray section has been disassembled.
- The paper feed tray unit has been replaced.
- U2 trouble has occurred.
- The PCU PWB has been replaced.
- The EEPROM on the PCU PWB has been replaced.

1) Go through the modes specified in Simulation 40-12.



```
SIMULATION 40-12
TRAY3 ADJUSTMENT. SELECT 1-2, AND PRESS START.
1. MAX. POSITION
2. MIN. POSITION
                                                 1
```

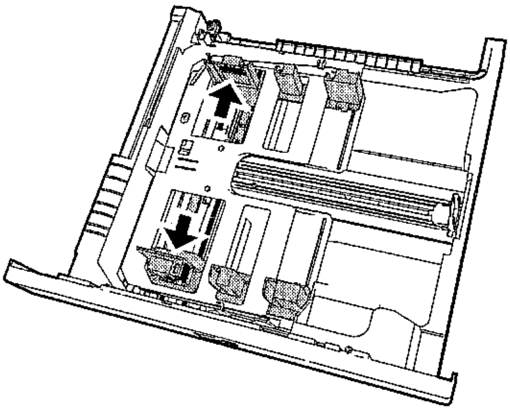
Select 1 and press [START] key.
Press [CUSTOM SETTINGS] key.

```
SIMULATION 40-12
TRAY3 ADJUSTMENT.
MAX. POSITION ··· COMPLETE (or "ERROR")
```

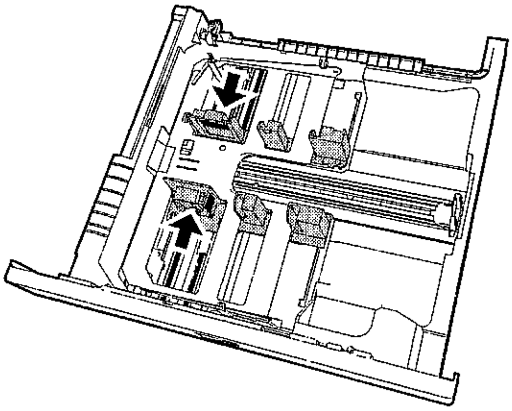
Select 2 and press [START] key.
Press [CUSTOM SETTINGS] key.

```
SIMULATION 40-12
TRAY3 ADJUSTMENT.
MIN. POSITION ··· COMPLETE (or "ERROR")
```

2) Open the paper feed guide to the maximum width position.



3) Select MAX. POSITION using the numeric keypad.
4) Press the Start key.
The maximum width detection level is recognized.
5) Press the CUSTOM SETTINGS key.
6) Open the paper feed guide to the minimum width position.



7) Select MIN. POSITION using the numeric keypad.
8) Press the Start key.
The minimum width detection level is recognized.

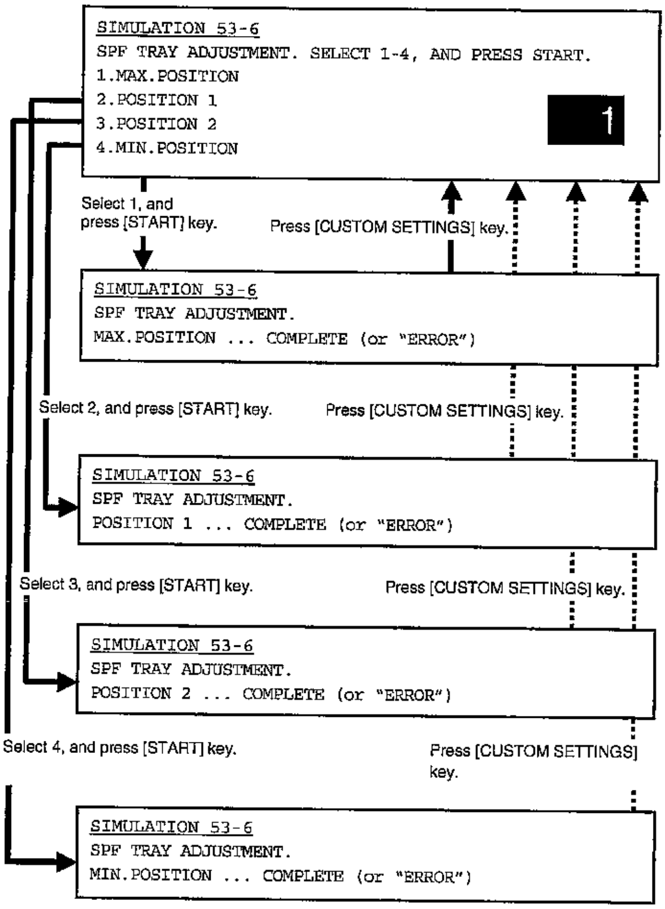
Note: When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

ADJ 14C Adjust the paper width sensor for the SPF paper feed tray

This adjustment is needed in the following situations:

- The paper feed tray section has been disassembled.
- The paper feed tray unit has been replaced.
- U2 trouble has occurred.
- The scanner PWB has been replaced.
- The EEPROM on the scanner PWB has been replaced.

1) Go through the modes specified in Simulation 53-6.



```
SIMULATION 53-6
SPF TRAY ADJUSTMENT. SELECT 1-4, AND PRESS START.
1.MAX.POSITION
2.POSITION 1
3.POSITION 2
4.MIN.POSITION
                                                 1
```

```
SIMULATION 53-6
SPF TRAY ADJUSTMENT.
MAX.POSITION ... COMPLETE (or "ERROR")
```

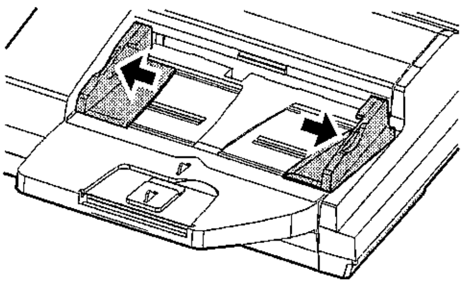
```
SIMULATION 53-6
SPF TRAY ADJUSTMENT.
POSITION 1 ... COMPLETE (or "ERROR")
```

```
SIMULATION 53-6
SPF TRAY ADJUSTMENT.
POSITION 2 ... COMPLETE (or "ERROR")
```

```
SIMULATION 53-6
SPF TRAY ADJUSTMENT.
MIN.POSITION ... COMPLETE (or "ERROR")
```

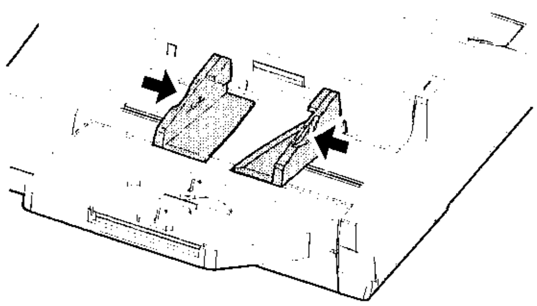
Select 1, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 3, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 4, and press [START] key.
Press [CUSTOM SETTINGS] key.

2) Open the SPF paper feed guide to the maximum width position.



3) Select MAX. POSITION using the numeric keypad.
4) Press the Start key.
The maximum width detection level is recognized.
5) Press the CUSTOM SETTINGS key.
6) Open the SPF paper feed guide to the width for the A4R size.
7) Select POSITION 1 using the numeric keypad.
8) Press the Start key.
The A4R width detection level is recognized.
9) Press the CUSTOM SETTINGS key.
10) Open the SPF paper feed guide to the width for the A5R size.
11) Select POSITION 2 using the numeric keypad.
12) Press the Start key.
The A5R width detection level is recognized.
13) Press the CUSTOM SETTINGS key.

14) Open the SPF paper feed guide to the minimum width position.



15) Select MIN. POSITION using the numeric keypad.

16) Press the Start key

The minimum width detection level is recognized.

Note: When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

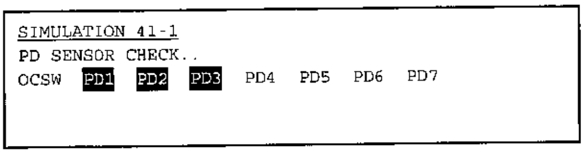
ADJ 15 Adjusting the original size detection (in original table mode)

This adjustment is needed in the following situations:

- The original size sensor section has been disassembled.
- The original size sensor section has been replaced.
- U2 trouble has occurred.
- The scanner control PWB has been replaced.
- The EEPROM on the scanner control PWB has been replaced.

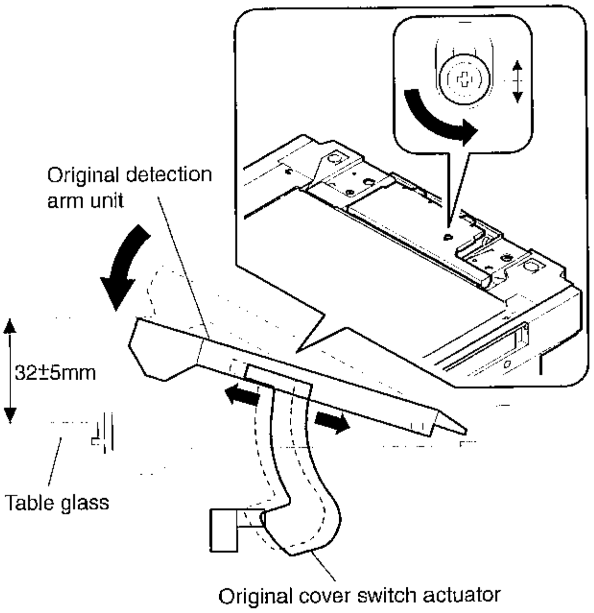
ADJ 15A Adjust the detection point of the original size sensor (in original table mode)

1) Go through the modes specified in Simulation 41-1.



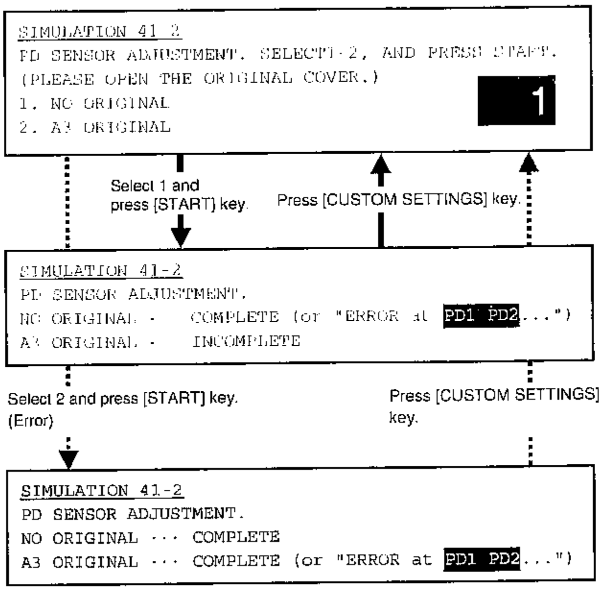
```
SIMULATION 41-1
PD SENSOR CHECK..
OCSW PD1 PD2 PD3 PD4 PD5 PD6 PD7
```

2) Gradually turn over the original detection arm unit in the arrow direction, and loosen the original cover switch actuator adjusting screw so that the OCSW indicator changes from inverse video to normal video when the arm unit top reaches a height of 32±0.5mm from the table glass. Then move the actuator to adjust its position. (If the original cover switch turns on in improper timing, the original detection mechanism mail fail to operate correctly.)



ADJ 15B Adjust the sensitivity of the original size sensor

1) Go through the modes specified in Simulation 41-2.



```
SIMULATION 41-2
PD SENSOR ADJUSTMENT. SELECT1-2, AND PRESS START.
(PLEASE OPEN THE ORIGINAL COVER.)
1. NO ORIGINAL
2. A3 ORIGINAL                                   1
```

Select 1 and press [START] key.
Press [CUSTOM SETTINGS] key.

```
SIMULATION 41-2
PD SENSOR ADJUSTMENT.
NO ORIGINAL ···  COMPLETE (or "ERROR at PD1 PD2...")
A3 ORIGINAL ···  INCOMPLETE
```

Select 2 and press [START] key. (Error)
Press [CUSTOM SETTINGS] key.

```
SIMULATION 41-2
PD SENSOR ADJUSTMENT.
NO ORIGINAL ··· COMPLETE
A3 ORIGINAL ··· COMPLETE (or "ERROR at PD1 PD2...")
```

2) Open the original cover. With nothing placed on the original table, select NO ORIGINAL using the numeric keypad.

3) Press the Start key

This sets the sensor level with no original detected.

4) Set A3 (11" x 17") paper on the original table, and select A3 ORIGINAL using the numeric keypad.

5) Press the Start key

This sets the sensor level with an original detected.

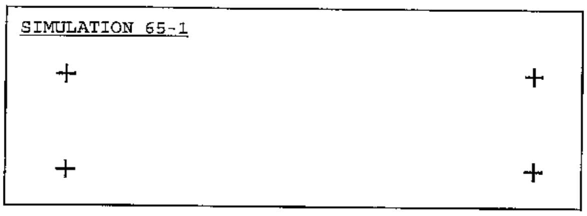
When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

ADJ 16 Adjusting the touch panel coordinates

This adjustment is needed in the following situations:

- The operation panel has been replaced.
- U2 trouble has occurred.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.

1) Go through the modes specified in Simulation 65-1.



SIMULATION 65-1

2) Press the four cross mark points.

Pressing the cross mark points correctly results in gray display. When the touch panel adjustment is complete with the four points pressed, the sub-number entry screen for simulation reappears.

If any error is detected, the touch panel returns to adjustment mode.

Note: Never use something with a sharp tip (such as a needle or pin) to press the touch panel.

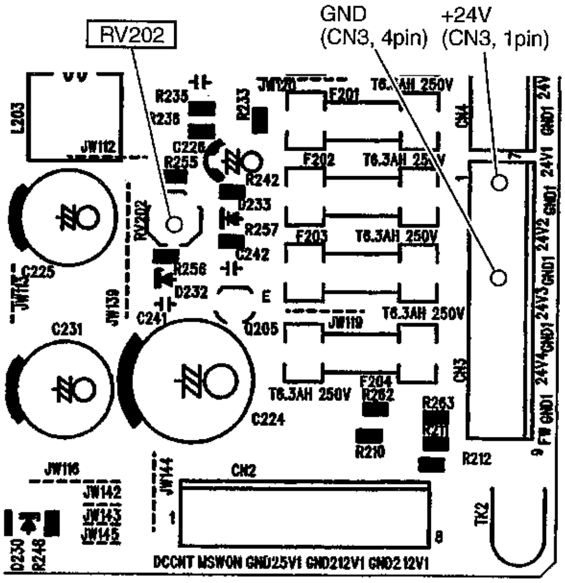
ADJ 17 Adjusting the supply voltage

This adjustment is needed in the following situations:

- One or more parts of the DC main power supply unit have been replaced.
- One or more parts of the DC sub power supply unit have been replaced.

(24 V supply voltage adjustment)

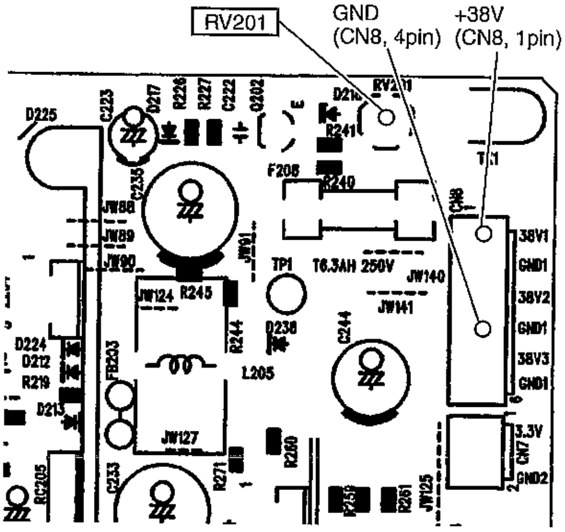
1) Apply a digital multi-meter to the DC main PWB 24 V line (CN3, 1 pin) and GND (CN3, 4 pin).
2) Turn RV202 on the DC main power supply PWB so that the voltage is 24 V.



RV202
GND
(CN3, 4pin)
+24V
(CN3, 1pin)
CN3
CN2
F201
F202
F203
F204
T6.3AH 250V
DCCNT MSWON GND25V1 GND212V1 GND2 12V1

(38 V supply voltage adjustment)

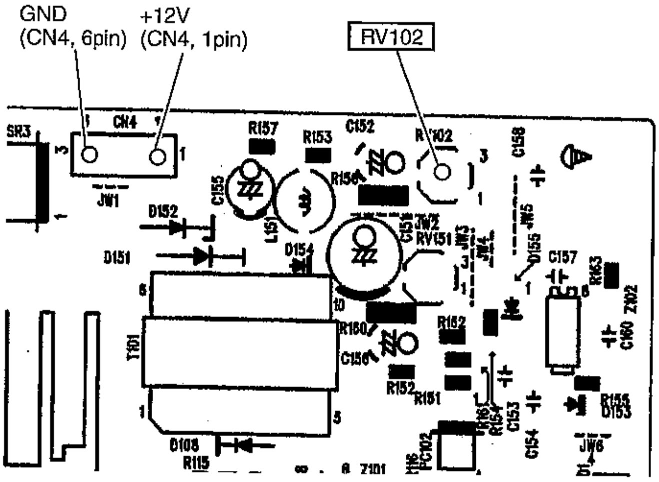
3) Apply a digital multi-meter to the DC main PWB 38 V line (CN8, 1 pin) and GND (CN8, 4 pin).
4) Turn RV201 on the DC main power supply PWB so that the voltage is 38 V.



RV201
GND
(CN8, 4pin)
+38V
(CN8, 1pin)
CN8
38V1
GND1
38V2
GND1
38V3
GND1
3.3V
GND2
T6.3AH 250V
TP1

(12 V supply voltage adjustment)

5) Apply a digital multi-meter to the DC sub PWB 12 V line (CN4, 1 pin) and GND (CN4, 6 pin).
6) Turn RV102 on the DC sub power supply PWB so that the voltage is 12 V.



GND
(CN4, 6pin)
+12V
(CN4, 1pin)
RV102
CN4
T101

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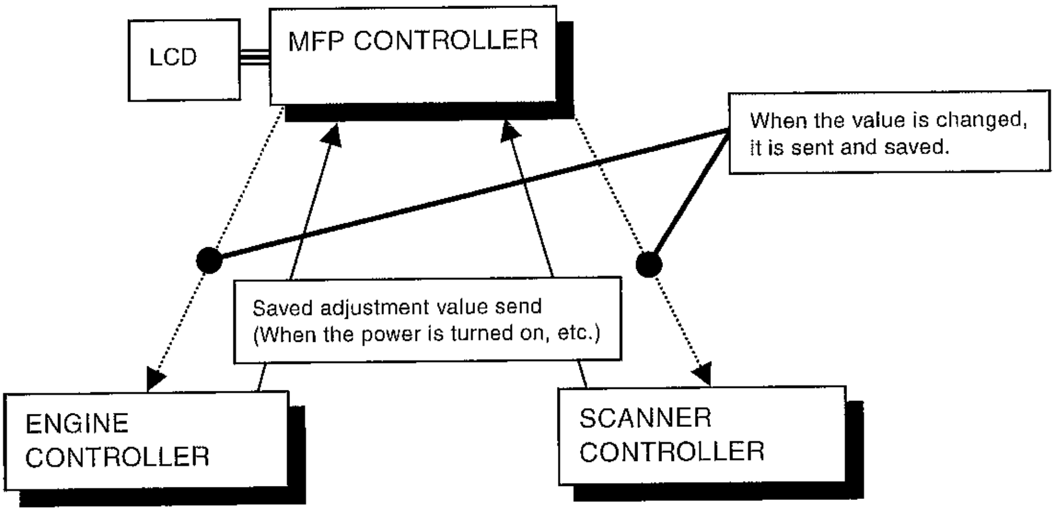
[8] SIMULATION

⚠ 1. Adjustment value/Simulation and storage data

A. Simulation adjustment value/ Set value data

⚠ Each controller is provided with an EEPROM. The adjustment/set values are collected to the MFP controller. If they are changed, they are sent back and saved.


LCD
MFP CONTROLLER
When the value is changed, it is sent and saved.
Saved adjustment value send (When the power is turned on, etc.)
ENGINE CONTROLLER
SCANNER CONTROLLER

⚠ B. Each storage data

(Data saved by the PCU PWB)

Counters	Adjustment value	Other
Drum rotation time counter (Accumulated time)	Developing bias voltage value	Serial number
Developer unit rotation time counter	Cleaning mode developing bias voltage value	Trouble history
Toner supply time (Block IC CHIP)	Main high voltage adjustment	Tray 1 size
Drum rotating time (Block IC CHIP)	Transfer charger voltage value	Tray 2 size
Total counter	Transfer belt cleaning voltage value	Manual destination information
Maintenance counter	Toner concentration reference value	
Developing counter	Density correction start set time (Developer unit)	Tray 3 destination information
Drum counter	Density correction rotation time (Developer tank)	Tray 4 destination information
Toner cartridge counter	Density correction amount (Developer tank)	Tray 1 paper remaining quantity data
Valid paper counter	Correction execution direction, upper/lower limit (Developer tank)	Tray 2 paper remaining quantity data
Tray 1 paper feed counter	Toner concentration temperature correction (low temperature side) correction amount	Tray 3 paper remaining quantity data
Tray 2 paper feed counter	Toner concentration temperature correction (low temperature side) set temperature	Tray 4 paper remaining quantity data
Tray 3 paper feed counter	Toner concentration temperature correction (low temperature side) release temperature	Final toner concentration sensor output value
Tray 4 paper feed counter	Toner concentration temperature correction (high temperature) correction amount	Toner cartridge IC CHIP destination
Manual paper feed counter	Toner concentration temperature correction (high temperature side) judgment temperature	Counter mode setting
ADU paper feed counter	Toner concentration temperature correction (high temperature side) judgment voltage	White paper exit count setting
Staple counter	Toner concentration temperature correction (high temperature side) correction value	Trouble memory mode setting
Punch counter	Toner concentration temperature correction (low temperature side) release time	Fusing operation mode (Prevention against curl)
Main unit right-side paper exit counter	Toner concentration temperature correction (high temperature side) toner concentration delay time	CE mark conforming operation mode
Side LCC paper feed counter	Multi-purpose width adjustment value	Maintenance cycle
Inserter counter	Manual width adjustment value	Print stop setting when developer life over
Saddle staple counter	Heater lamp temperature (Center, normal control)	Saddle alignment operation priority mode
	Lead edge adjustment	

Counters	Adjustment value	Other
	Led edge void set value	
	Rear edge void set value	
	Side edge setting	
	Print off-center adjustment value	
	Resist amount adjustment value	
	Laser power adjustment value	
	PPD1 sensor adjustment	
	Process correction inhibit allow set value	
	Developing bias rising correction wait time	
	Developing bias rising correction adjustment value	
	Built-in finisher jogger position adjustment	
	Saddle adjustment value	

⚠ (Data saved by the scanner control PWB)

Counters	Adjustment value	Other
Scan counter	Document lead edge adjustment value	Exposure mode set value
SPF paper pass counter	Document off-center adjustment value	Scanner serial number
SPF stamp counter	Document image loss amount adjustment value	Document image loss amount adjustment value
	Magnification ratio adjustment value	
	SPF resist amount adjustment value	
	Exposure motor speed adjustment value	
	Platen document detection adjustment value	
	SPF size width detection adjustment value	
	Touch panel adjustment value	
	Exposure level adjustment value	
	ϒ change value	
	OC/SPF exposure correction value	
	Shading adjustment value (CCD/CIS)	
	CCD shading start position adjustment value	

⚠ (Data saved by the MFP control PWB)

Counters	Adjustment value	Other
Copy counter	FAX SOFT SW., etc.	Trouble history
Printer counter		JAM history
FAX receive counter		Destination setting
FAX send counter		Language setting
All valid paper counter		Toner save mode setting
Trouble counter		13" setting
JAM counter		Auditor setting
		Counter mode setting
		Trouble memory mode setting
		Center binding mode AMS setting
		PC/MODEM communication trouble detection YES/NO setting
		Tag number set value
		Printers set values
		Network set value

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⚠ (Detailed list)

Main code	Sub code	Operation contents	Data save destination/Target		
			MFP	Scanner	Engine
1	01	Mirror scan operation		●	
	02	Optical system sensor check		●	
2	01	SPF operation aging		●	
	02	SPF sensor check		●	
	03	SPF individual load check		●	
3	02	Finisher sensor check			●
	03	Finisher individual load check			●
	10	Finisher adjustment			●
	30	Inserter sensor check			●
	31	Inserter load operation			●
	32	Inserter size width detection adjustment value input			●
4	02	LCC sensor check			●
	03	LCC individual load check			●
5	01	Lamp /LED all ON	●		
	02	Heater lamp check			●
	03	Copy lamp check		●	
	04	Discharge lamp check			●
6	01	Transport system load operation (Clutch/Solenoid)			●
	02	Fan motor operation			●
	03	Transfer separation motor operation			●
7	01	Operation registration (No detection of JAM, No detection of developer tank, aging, No warm-up, intermittent operation, No shading, etc.)	●		
	06	Intermittent aging frequency setting	●		
	08	Warm-up time display (No aging)			●
8	01	Developing bias output setting, check			●
	02	Charging output setting, check			●
	06	THV (transfer) output setting, check			●
	17	Transfer roller output setting, check			●
	18	Transfer cleaning roller output setting, check			●
	19	Fusing roller bias output check			●
9	01	ADU load operation (Clutch/Solenoid)			●
	02	ADU sensor check			●
10	01	Toner motor operation check			●
	02	Toner remaining quantity detection sensor check			●
13		"U1" trouble cancel	●		
14		Trouble cancel	●		
15		LCC trouble cancel	●		●
16		"U2" trouble cancel	●	●	●
17		"PF" trouble cancel	●		
21	01	Maintenance cycle setting			●
22	01	Each counter display (Total/ Maintenance/ Developer/ RADF/ Staple/ Tray)	●	●	●
	02	JAM/Trouble counter display	●		
	03	JAM history display	●		
	04	Trouble code display	●		
	05	ROM version data display	●	●	●
	06	Various data print	●		
	07	Key operator code display	●		
	08	Document/staple counter display		●	●
	09	Paper feed counter display			●
	10	Main unit system configuration check	●		
	11	FAX send/receive counter display	●		
	12	SPF JAM history display	●		
	13	Process data display			●
	19	Network scanner-related counter display	● (FAX)		
23	02	JAM/trouble data print	●		
	80	Various data print	●		

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	Main code	Sub code	Operation contents	Data save destination/Target		
				MFP	Scanner	Engine
	24	01	JAM/trouble counter clear	●		
		02	Paper feed counter clear	●		
		03	Document/staple counter clear		●	●
		04	Maintenance counter clear			●
		05	Developer counter clear			●
		06	Copy counter clear	●		
		07	Drum counter clear			●
		09	Printer/other counter clear	●		
		10	FAX counter clear	●		
		11	Various rotation time timer clear			●
		15	Network scanner-related counter clear	● (FAX)		
	25	01	Toner concentration sensor monitor			●
		02	Auto developer adjustment			●
	26	02	Size setting			●
▲		03	Auditor setting	●		
		05	Counter mode setting			●
		06	Destination setting	●		
		10	Network scanner trial mode setting	●		
		18	Toner save mode setting	●		
▲		30	CE mark conformity control inhibit/allow setting			●
▲		35	Trouble memory mode setting			●
		38	Print stop setting when life over			●
		41	Center binding mode AMS setting	●		
		50	Black/white reverse function valid/invalid setting	●		
▲		52	White paper exit count-up setting			●
		68	CA key cancel function valid/invalid	●		
	27	01	PC/MODEM communication trouble (U7-00) detection YES/NO setting	●		
		05	Tag number setting	●		
	30	01	Main unit sensor check			●
		02	Tray sensor check			●
	40	01	Manual paper feed size width detection check			●
		02	Manual paper feed size width detection level adjustment			●
		07	Manual paper feed size width detection adjustment value input			●
		11	MPT size width detection check			●
		12	MPT size width detection level adjustment			●
	41	01	Document size detection photo sensor check		●	
		02	Document size detection photo sensor detection level		●	
		03	Document size detection photo sensor light receiving/detection level check		●	
	43	01	Fusing temperature control temperature setting (Normal/Energy-save mode)			●
▲		03	Fusing roller RPM setting			●
	44	01	Process correction inhibit/allow setting			
		02	DM/ID sensor gain adjustment			
		04	Standard patch density setting			
		05	Patch making reference condition setting			●
		09	Process control data display			●
		12	Process control patch data display			●
		14	Temperature/humidity sensor output monitor			●
		16	Toner concentration reference value check			●

Main code	Sub code	Operation contents	Data save destination/Target		
			MFP	Scanner	Engine
46	02	Copy exposure level adjustment (binary)	●	●	
	09	Copy exposure level adjustment/individual setting (Text binary)	●	●	
	10	Copy exposure level adjustment, individual setting (Text/Photo binary)	●	●	
	11	Copy exposure level adjustment, individual setting (Photo binary)	●	●	
	12	FAX exposure level adjustment (1 mode auto adjustment)	●	●	
	13	FAX exposure level adjustment, individual setting (Normal text)	●	●	
	14	FAX exposure level adjustment, individual setting (Fine)	●	●	
	15	FAX exposure level adjustment, individual setting (Super Fine)	●	●	
	16	FAX exposure level adjustment, individual setting (Ultra Fine)	●	●	
	17	Shading reference value change (Gain adjustment)		●	
	18	Υ change (Copier mode)		●	
	19	Exposure mode setting		●	
	20	OC/SPF exposure correction		●	
	21	Scanner exposure level adjustment (1 mode auto adjustment)		●	
	22	Scanner exposure level adjustment, individual setting (Normal text)		●	
	23	Scanner exposure level adjustment, individual setting (Fine)		●	
	24	Scanner exposure level adjustment, individual setting (Super Fine)		●	
	25	Scanner exposure level adjustment, individual setting (Ultra Fine)		●	
	27	Υ change (Scanner mode)		●	
	31	Copy sharpness setting		●	
	39	FAX sharpness setting		●	
	45	FAX exposure level adjustment, individual setting (600dpi)	●	●	
48	01	Magnification ratio adjustment (by Input/Output)	●	●	
	05	Motor speed adjustment		●	
50	01	Copy lead edge adjustment (Document table)	●	●	●
	02	Lead edge adjustment (Document table simple type)	●	●	●
	05	Print lead edge adjustment	●		●
	06	Copy lead edge adjustment (SPF)	●	●	●
	07	Copy lead edge adjustment (SPF simple type)	●	●	●
	10	Print off-center adjustment	●		●
	12	Document off-center adjustment	●	●	
	27	Document image loss setting (FAX send/scanner mode)		●	
51	02	Resist amount adjustment		●	●
53	06	SPF size width detection level adjustment		●	
	07	SPF size width detection adjustment value input		●	
	08	SPF scan position adjustment		●	
55	01	Engine soft SW change and check			●
	02	Scanner soft SW change and check		●	
	03	Controller soft SW change and check	●		
56	01	Data transfer	●		
60	01	ICU image DRAM read/write check	●		
61	01	LSU operation check			●
	02	Laser power setting (Copier)			●
	03	Laser power setting (FAX)			●
	04	Laser power setting (Printer)			●
62	01	Hard disk format	●		
	02	Hard disk read/write check	●		
	03	Hard disk read/write check (All areas)	●		
	06	HDD self diag	●		
	07	Self diag error log print	●		
	08	Hard disk format (Excluding the system area)	●		
	10	Job complete list delete	●		
	11	Document filing data delete	●		
63	01	Shading check		●	
	02	Shading execution		●	
	07	White plate scan start position adjustment		●	
64	01	Self print	●		
65	01	Touch panel adjustment		●	
	02	Touch panel check		●	

Main code	Sub code	Operation contents	Data save destination/Target		
			MFP	Scanner	Engine
66	01	FAX-related soft SW setting check/change	●		
	02	FAX-related soft SW clear (Excluding FAX adjustment values)	●		
	03	FAX-related memory check	●		
	04	Signal send mode (Signal send level: Max.)	●		
	05	Signal send mode (Signal send level: Soft SW setting)	●		
	06	Confidential pass code print	●		
	07	Image memory content output	●		
	08	Voice message reproduction (Signal send level: Max.)	●		
	09	Voice message reproduction (Signal send level: Soft SW setting)	●		
	10	Image memory clear	●		
	11	300bps signal send (Signal send level: Max.)	●		
	12	300bps signal send (Signal send level: Soft SW setting)	●		
	13	Dial number registration	●		
	14	Dial test (10PPS make time setting & delivery test)	●		
	15	Dial test (20PPS make time setting & send test)	●		
	16	Dial test (DTMF signal adjustment & send test)	●		
	17	DTMF signal send mode (Signal send level: Max.)	●		
	18	DTMF signal send mode (Signal send level: Soft SW setting)	●		
	19	Address book backup (WR TO FLASH)	●		
	20	Address book backup (RD FROM FLASH)	●		
	21	FAX information print	●		
	23	FAX program download	●		
	24	FAST memory data clear	●		
	25	MODEM dial-in FAX number registration	●		
	26	MODEM dial-in telephone number registration	●		
	27	Voice warp transfer destination registration	●		
	29	Address book clear	●		
	30	TEL/LIU status change check	●		
	31	TEL/LIU setting	●		
	32	Receive data check	●		
	33	Signal detection check	●		
	34	Communication time measurement display	●		
	35	MODEM program rewrite	●		
	36	MFP controller I/F check	●		
	39	FAX destination registration	●		
	60	(Blind) ACR data registration	●		
67	02	Centro port check	●		
	11	Select IN signal setting	●		
	16	Network card check	●		

2. Outline and purpose

The simulation has the following functions to grasp the machine operating status, identify the trouble position and causes in an earlier stage, and make various setups and adjustments speedily for improving the serviceability of the machine.

1) Various adjustments
2) Setup of specifications and functions
3) Canceling troubles
4) Operation check
5) Various counters check, setup, and clear
6) Machine operating status (operation history) data check, clear
7) Transfer of various data (adjustments, setup, operations, counters)

The operating procedures and the displays differ depending on the form of the operation panel of the machine.

3. Code-type simulation

A. Operating procedures and operations

* Entering the simulation mode

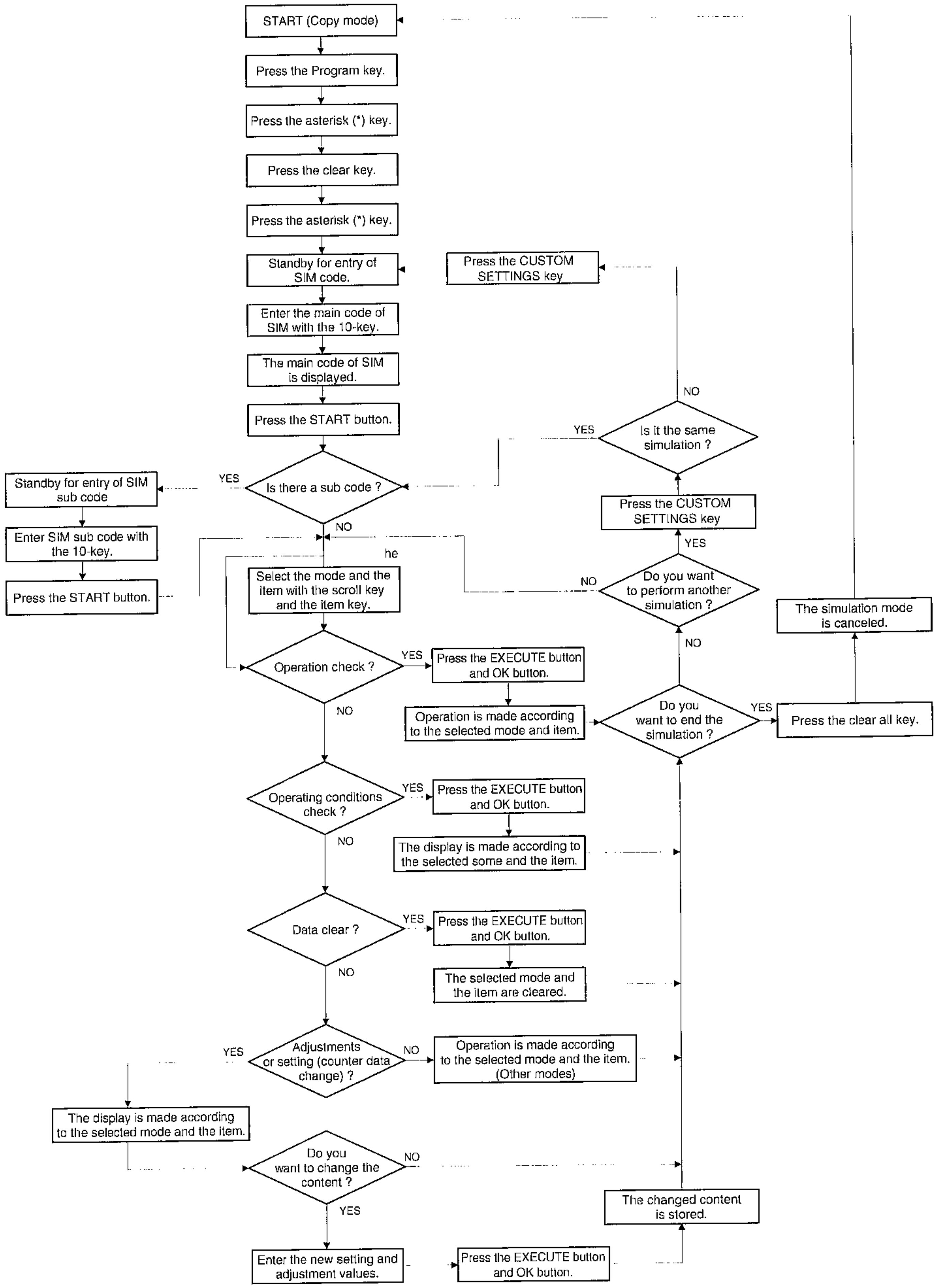
1) Copy mode key ON → Program key ON → Asterisk (*) key ON → CLEAR key ON → Asterisk (*) key ON → Ready for input of a main code of simulation
2) Entering a main code with the 10-key → START key ON
3) Entering a sub code with the 10-key → START key ON
4) Select an item with the scroll key and the item key.
5) The machine enters the mode corresponding to the selected item.

   Press START key or EXECUTE key to start the simulation operation.

   To cancel the current simulation mode or to change the main code and the sub code, press the user setup key.

* Canceling the simulation mode to return to the normal mode

1) Press CA key.


START (Copy mode)
Press the Program key.
Press the asterisk (*) key.
Press the clear key.
Press the asterisk (*) key.
Standby for entry of SIM code.
Enter the main code of SIM with the 10-key.
The main code of SIM is displayed.
Press the START button.
Is there a sub code ?
YES
NO
Standby for entry of SIM sub code
Enter SIM sub code with the 10-key.
Press the START button.
he
Select the mode and the item with the scroll key and the item key.
Operation check ?
YES
Press the EXECUTE button and OK button.
Operation is made according to the selected mode and item.
NO
Operating conditions check ?
YES
Press the EXECUTE button and OK button.
The display is made according to the selected some and the item.
NO
Data clear ?
YES
Press the EXECUTE button and OK button.
The selected mode and the item are cleared.
NO
Adjustments or setting (counter data change) ?
YES
NO
Operation is made according to the selected mode and the item. (Other modes)
The display is made according to the selected mode and the item.
Do you want to change the content ?
NO
YES
Enter the new setting and adjustment values.
Press the EXECUTE button and OK button.
The changed content is stored.
Do you want to end the simulation ?
YES
NO
Press the clear all key.
The simulation mode is canceled.
Do you want to perform another simulation ?
NO
YES
Press the CUSTOM SETTINGS key
Is it the same simulation ?
YES
NO
Press the CUSTOM SETTINGS key

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B. Simulation list

(1) Main/ Sub

Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
1	1	Used to check the operations of the scanner (read) unit and its control circuit.	Operation test/Check	Optical (Image scanning)		Operation	
	2	Used to check the operation of sensor and detector in the scanning (read) section and the related circuit.	Operation test/Check	Optical (Image scanning)		Operation	
2	1	Used to check the operations of the automatic document feeder unit and the control circuit.	Operation test/Check	DSPF		Operation	
	2	Used to check the operations of the sensors and detectors in the automatic document feeder unit and the related circuits.	Operation test/Check	DSPF		Operation	
	3	Used to check the operations of the loads in the automatic document feeder unit and the control circuits.	Operation test/Check	DSPF		Operation	
3	2	Used to check the operation of sensor and detector in the finisher and the related circuit.	Operation test/Check	Finisher		Operation	
	3	Used to check the operation of the load in the finisher and the control circuit.	Operation test/Check	Finisher		Operation	
	10	Finisher (AR-F16) adjustment	Adjustment	Finisher		Operation	
	30	Used to check the operations of the sensors and detectors in the inserter.	Operation test/Check	Inserter			
	31	Used to check the operations of the loads in the inserter and the related circuits.	Operation test/Check	Inserter		Operation	
	32	Inserter paper width detection level setting.	Setting (Adjustment)	Inserter		Operation	
4	2	Used to check the operations of the sensors and detectors in the paper feed section (large capacity tray) and the related circuit.	Operation test/Check	Paper feed		Operation	
	3	Used to check the operations of the loads in the paper feed section (large capacity tray) and the related circuit.	Operation test/Check	Paper feed		Operation	
5	1	Used to check the operation of the display, LCD in the operation panel, and control circuit.	Operation test/Check	Operation (Display/Operation key)		Operation	
	2	Used to check the operation of the heater lamp and the control circuit.	Operation test/Check	Fixing (Fusing)		Operation	
	3	Used to check the operation of the scanner lamp and the control circuit.	Operation test/Check	Optical (Image scanning)		Operation	
	4	Used to check the operation of the discharge lamp and the related circuit.	Operation test/Check	Process		Operation	
6	1	Used to check the operation of the paper transport system loads and the control circuit.	Operation test/Check	Paper transport (Discharge/ Switchback/ Transport)		Operation	
	2	Used to check the operations of each fan motor and its control circuit.	Operation test/Check	Other		Operation	
	3	Used to check the operations of the transfer unit and the related circuit.	Operation test/Check	Process (Transfer)		Operation	

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	Code		Function (Purpose)	Purpose	Section		Item	
	Main	Sub						
	7	1	Used to set the operating conditions of aging.	Setting			Operation	
		6	Used to set the intermittent aging cycle.	Setting			Operation	
		8	Used to set the warm-up time display YES/NO.	Setting			Operation	
	8	1	Used to check and adjust the operations of the developing voltage of each color and the control circuit.	Adjustment/Operation test/Check	Image process (Photoconductor/ Developing/ Transfer/Cleaning)			
		2	Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit.	Adjustment/Operation test/Check	Image process (Photoconductor/ Developing/ Transfer/Cleaning)			
⚠		6	Used to check and adjust the operation of the transfer voltage and the control circuit.	Adjustment/Operation test/Check	Image process (Photoconductor/ Developing/ Transfer/ Cleaning)/Transfer			
⚠		17	Used to check and adjust the operation of the transfer voltage and the related circuit. (Transfer belt cleaning mode)	Operation test/Check	Image process (Photoconductor/ Developing/ Transfer/Cleaning)			
⚠		18	Used to check and adjust the voltage of the transfer CL roller cleaning/ transfer CL roller print mode and the control circuit. (Not used)	Adjustment/Operation test/Check	Image process (Photoconductor/ Developing/ Transfer/Cleaning)			
⚠		19	Used to check and adjust the fusing bias voltage and the control circuit. (Not used)	Adjustment/Operation test/Check	Fusing			
	9	1	Used to check and adjust the operation of the load (clutch/ solenoid) in the duplex section and the control circuit.	Operation test/Check	Duplex		Operation	
		2	Used to check the operations of the sensors and detectors in the duplex section and its control circuit.	Operation test/Check	Duplex		Operation	
	10	1	Used to check the operations of the toner motor and the related circuit.	Operation test/Check	Process (Developing)		Operation	
		2	Used to check the operations of the toner remaining quantity sensor and the related circuit.	Operation test/Check	Process (Developing)		Operation	
	13	0	Used to cancel the self-diag "U1" trouble. (Only when FAX is installed.)	Clear/Cancel (Trouble etc.)	FAX		Trouble	
⚠	14	0	Used to cancel excluding the self-diag U1/LCC/U2/PF troubles.	Clear/Cancel (Trouble etc.)			Trouble	Error
	15	0	Used to cancel the self-diag "U6-09, F3-12, 22" (large capacity paper feed tray, paper feed trays 1, 2) troubles.	Clear/Cancel (Trouble etc.)	LCC		Trouble	
	16	0	Used to cancel the self-diag U2 troubles.	Clear/Cancel (Trouble etc.)	MFP control PWB, PCU PWB, scanner control PWB		Trouble	
	17	0	Used to cancel the PF troubles (when the copy inhibit command from the host computer is received).	Clear/Cancel (Trouble etc.)	Communication unit (TEL/LIU/ MODEM etc.)		Trouble	Error
	21	1	Used to set the maintenance cycle.	Setting			Specifications	Counter

Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
22	1	Used to check the print count value in each section and each operation mode. (Used to check the maintenance timing.)	Adjustment/Setup/ Operation data output/ Check (Display/Print)			Counter	
	2	Used to check the total numbers of misfeed and troubles. (When the number of misfeed is considerably great, it is judged as necessary for repair. The misfeed rate is obtained by dividing this count value with the total counter value.)	Adjustment/Setup/ Operation data output/ Check (Display/Print)			Trouble	
	3	Used to check misfeed positions and the misfeed count of each position. (If the misfeed count is considerably great, it may be judged as necessary to repair.)	Adjustment/Setup/ Operation data output/ Check (Display/Print)	Sections other than SPF/DSPF section		Trouble	Misfeed
	4	Used to check the trouble (self diag) history.	Adjustment/Setup/ Operation data output/ Check (Display/Print)			Trouble	
	5	Used to check the ROM version of each unit (section).	Other			Software	
	6	Used to output the list of the setting and adjustment data (simulations, FAX soft switch, counters).	Adjustment/Setup/ Operation data output/ Check (Display/Print)			Data	Adjust/Setting data
	7	Used to display the key operator code. (This simulation is used when the customer forgets the key operator code.)	Adjustment/Setup/ Operation data output/ Check (Display/Print)			Data	User data
	8	Used to check the number of use of the finisher, the SPF, and the scan (reading) unit.	Adjustment/Setup/ Operation data output/ Check (Display/Print)	Optical (Image scanning)	Finisher	Counter	
	9	Used to check the number of use (print quantity) of each paper feed section.	Adjustment/Setup/ Operation data output/ Check (Display/Print)	Paper feed, ADU		Counter	
	10	Used to check the system configuration (option, internal hardware).	Adjustment/Setup/ Operation data output/ Check (Display/Print)			Specifications	Options
	11	Used to check the use frequency (send/receive) of FAX. (Only when FAX is installed)	Adjustment/Setup/ Operation data output/ Check (Display/Print)	FAX		Data	
	12	Used to check the SPF misfeed positions and the number of misfeed at each position. (When the number of misfeed is considerably great, it can be judged as necessary for repair.)	Adjustment/Setup/ Operation data output/ Check (Display/Print)	DSPF		Trouble	
	13	Used to check the operating time of the process section (OPC drum, DV unit, toner bottle).	Adjustment/Setup/ Operation data output/ Check (Display/Print)			Counter	
	19	Used to check the values of the counters related to the scan mode and the internet FAX mode.	Adjustment/Setup/ Operation data output/ Check (Display/Print)	Scanner		Counter	
23	2	Used to check the trouble history of paper jam and misfeed. (If the number of misfeed and troubles is considerably great, it may be judged as necessary to repair.)	Adjustment/Setup/ Operation data output/ Check (Display/Print)			Trouble	
	80	Used to check the operations of the sensors and detectors in the paper feed and transport section.	Operation test/Check	Paper feed, paper transport		Operation	

Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
24	1	Used to clear the misfeed counter, the misfeed history, the trouble counter, and the trouble history. (The counters are cleared after completion of maintenance.)	Data clear			Counter	
	2	Used to clear the number of use (the number of prints) of each paper feed section.	Data clear	Paper feed		Counter	
	3	Used to clear the number of use of the finisher, SPF, and the scan (reading) unit.	Data clear			Counter	
	4	Used to reset the maintenance counter.	Data clear			Counter	
	5	Used to reset the developer counter. (The developer counter of the DV unit which is installed is reset.)	Data clear			Counter	Developer
	6	Used to reset the copy counter.	Data clear			Counter	Copy
	7	Used to clear the OPC drum counter. (Perform this simulation when the OPC drum is replaced.)	Data clear	Image process (Photoconductor/ Developing/ Transfer/Cleaning)		Counter	Photo conductor
	9	Used clear the printer mode print counter and the self print mode print counter.	Data clear	Printer		Counter	
	10	Used to clear the FAX counter. (Only when FAX is installed)	Data clear	FAX		Counter	
	11	Used to reset the OPC drum rotation time, and the DV unit rotation time counter. The developer counter in the DV unit installed is reset.	Data clear	Image process (Photoconductor/ Developing/ Transfer/Cleaning)		Counter	Developer
	15	Used to clear the counters related to the scan mode and the internet FAX mode.	Data clear			Counter	
25	1	Used to check the operations of the developing section (toner concentration, humidity and toner concentration sensor, humidity sensor). (The toner concentration sensor output can be monitored.)	Operation test/Check	Process (Developing section)		Operation	
	2	Used to make the initial setting of toner concentration when replacing developer.	Setting	Image process (Photoconductor/ Developing/ Transfer/Cleaning)			
26	2	Used to set the paper size of the large capacity tray (LCC) and the paper feed tray 2. (When the paper size is changed, this simulation must be executed to change the paper size in software.)	Setting	Paper feed		Setting	
	3	Used to set the specifications of the auditor. Setting must be made according to the auditor use conditions.	Setting	Auditor		Specifications	
	5	Used to set the count mode of the total counter and the maintenance counter.	Setting			Specifications	Counter
	6	Used to set the specifications (paper, fixed magnification ratio, etc.) of the destination.	Setting			Specifications	Destination
	10	Used to set the network scanner trial mode.	Setting			Operation	

Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
26	18	Used to set YES/NO of toner save operation. (This function is valid only in Japan and UK versions. (Depends on the destination setting of SIM26-6.) For the other destinations, the same setting can be made by the user program P22.)	Setting			Specifications	Operation mode
	30	Used to set the operation mode conforming to the CE mark (Europe safety standards). (Conforming to soft start when driving the fusing heater lamp.)	Setting			Specifications	Operation mode (Common)
	35	Used to set whether the same continuous troubles are displayed as one trouble or the series of troubles with SIM 22-4 when the same troubles occur continuously.	Setting			Specifications	
⚠	38	Used to set CONTINUE/STOP of printing when maintenance timing is over and the count value reaches 110% of replacement timing (life).	Setting	Other		Specifications	
	41	Used to set YES/NO of the automatic magnification ratio selection (AMS) in the pamphlet mode.	Setting			Specifications	Operation mode (Common)
	50	Black-White reverse YES/NO setting	Setting			Specifications	Operation
	52	Used to set whether non-print paper (insertion paper, cover paper) (blank image print paper) is counted up or not.	Setting	Paper transport (Discharge/ Switchback/ Transport)		Specifications	Operation mode
	68	Used to set ENABLE/DISABLE of the CA key cancel function of print stop.	Setting			Specifications	Operation
27	1	Used to set the specifications for operations in case of communication trouble between the host computer and MODEM (machine side). (When communication trouble occurs between the host computer MODEM and the machine, the self diag display (U7-00) is printed and setting for inhibition of print or not is made.)	Setting	Communication unit (TEL/LIU/ MODEM etc.)		Specifications	Operation mode
	5	Used to enter the machine tag No. (This function allows to check the tag No. of the machine with the host computer.)	Setting	Communication unit (TEL/LIU/ MODEM etc.)		Specifications	Operation mode
30	1	Used to check the operation of sensors and detectors in other than the paper feed section and the operations of the related circuits.	Operation test/Check			Operation	
	2	Used to check the operation of sensors and detectors in the paper feed section and the related circuits.	Operation test/Check	Paper feed		Operation	
40	1	Used to check the operation of the manual feed tray paper size detector and the related circuit. (The operation of the manual feed tray paper size detector can be monitored with the LCD display.)	Operation test/Check	Paper feed		Operation	
	2	Used to adjust the manual paper feed tray paper width detector detection level.	Adjustment	Paper feed		Operation	
	7	Used to enter the manual paper feed tray paper width adjustment value.	Adjustment/Setup	Paper feed		Operation	

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Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
40	11	Used to check the multi-purpose tray width detection adjustment value.	Operation test/Check	Paper feed		Operation	
	12	Used to check the multi-purpose tray width detection adjustment value.	Adjustment/Setup	Paper feed		Operation	
41	1	Used to check the operation of the document size sensor and the related circuit. (The operation of the document size sensor can be monitored with the LCD display.)	Operation test/Check	Other		Operation	
	2	Used to adjust the document size sensor sensing level.	Adjustment	Other		Operation	
	3	Used to check the operation of the document size sensor and the related circuit. (The document size sensor output level can be monitored with the LCD display.)	Operation test/Check	Other		Operation	
43	1	Used to set the fusing temperature in each operation mode.	Setting	Fixing (Fusing)		Operation	
	3	Fusing roller RPM setting.	Setting (Adjustment)	Fixing (Fusing)		Operation	
44	1	Used to set enable/disable of correction operations in the image forming (process) section.	Setting	Image process (Photoconductor/ Developing/ Transfer/Cleaning)		Operation	
	2	Used to perform the gain adjustment (image density sensor LED current adjustment) of the image density sensor and the gain adjustment (OPC drum marking sensor LED current adjustment) of the OPC drum marking sensor.	Adjustment	Image process (Photoconductor)		Operation	
	4	Used to set the target density level in the image density correction.	Setting	Image process (Photoconductor/ Developing)		Operation	
	5	Used to set the reference developing bias voltage, the reference main charger grid voltage, and the laser power in the image density correction.	Setting	Image process (Photoconductor/ Developing)		Operation	
	9	Used to check the data related to the image forming section correction (process correction) result (corrected main charger grid voltage, the developing bias voltage, and the laser power voltage in each print mode). (This simulation allows to check that correction is performed normally or not.)	Adjustment/Setup/ Operation data output/ Check (Display/Print)	Image process (Photoconductor/ Developing/ Transfer/Cleaning)		Data	Operation data (Machine condition)
	12	Used to display sampling toner image patch density data in image density correction. (Used to check that the correction is performed normally or not.)	Adjustment/Setup/ Operation data output/ Check (Display)	Image process (Photoconductor/ Developing)		Operation	
	14	Used to check the output level of the temperature sensor and the humidity sensor.	Adjustment/Setup/ Operation data output/ Check (Display)	Image process (Photoconductor/ Developing)		Operation	
	16	Used to check the toner concentration control data.	Adjustment/Setup/ Operation data output/ Check (Display)	Image process (Developing)		Operation	

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Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
46	2	Used to adjust the copy density in all the copy modes (Auto, Text, Text/ Photo, and Photo mode).	Adjustment			Picture quality	Density
	9	Used to adjust the print density for each density level (display value) in the copy mode (binary - Text mode). An optional print density can be set for each density level (display value).	Adjustment			Picture quality	Density
	10	Used to adjust the print density for each density level (display value) in the copy mode (binary - Text/Photo mode). An optional print density can be set for each density level (display value).	Adjustment			Picture quality	
	11	Used to adjust the print density for each density level (display value) in the copy mode (binary - Photo mode). An optional print density can be set for each density level (display value).	Adjustment			Picture quality	Density
	12	Used to adjust the print density in the FAX mode (all modes).	Adjustment			Picture quality	
	13	Used to adjust the print density in the FAX mode (each normal mode). (Only when FAX is installed.)	Adjustment			Picture quality	
	14	Used to adjust the print density in the FAX mode (each fine mode). (Only when FAX is installed.)	Adjustment			Picture quality	
	15	Used to adjust the print density in the FAX mode (each super fine mode). (Only when FAX is installed.)	Adjustment			Picture quality	
	16	Used to adjust the print density in the FAX mode (each ultra fine mode). (Only when FAX is installed.)	Adjustment			Picture quality	
	17	Used to set the gain in shading correction.	Setting	Optical (Image scanning)	CCD, CIS	Operation	
▲	18	Used to adjust the gamma (density gradient) in the copy mode.	Adjustment			Picture quality	Density
	19	Used to set the auto mode operation specifications in each mode (copy, scan, FAX).	Adjustment			Picture quality	Density
	20	Used to adjust the copy density correction in the SPF copy mode for the document table copy mode. The adjustment is made so that the copy density becomes the same as that of the document table copy mode.	Adjustment	SPF		Picture quality	Density
	21	Used to adjust the scanner exposure level in all the scanner modes.	Adjustment			Picture quality	Density
	22	Used to adjust the scanner exposure level in the normal text mode.	Adjustment			Picture quality	Density
	23	Used to adjust the scanner exposure level in the fine text mode.	Adjustment			Picture quality	Density
	24	Used to adjust the scanner exposure level (in the super fine text mode).	Adjustment			Picture quality	Density
	25	Used to adjust the scanner exposure level in the ultra fine text mode.	Adjustment			Picture quality	Density
	27	Used to adjust the gamma (density gradient) of the network scanner mode.	Adjustment			Picture quality	

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Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
46	31	Used to adjust sharpness of the copy mode.	Adjustment			Picture quality	
	39	Used to adjust sharpness of the FAX mode.	Adjustment			Picture quality	
	45	Used to adjust the image density in the FAX mode (600dpi).	Adjustment			Picture quality	
48	1	Used to adjust the copy magnification ratio (in the main scanning and the sub scanning directions).	Adjustment	Optical (Image scanning)		Picture quality	
	5	Used to adjust the copy magnification ratio in the sub scanning direction.	Adjustment	Optical (Image scanning)		Picture quality	
50	1	Used to adjust the copy image position and the void area (image loss) adjustment on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-5 and 50-2 (Simplified method).) (Document table mode)	Adjustment			Picture quality	Image position
	2	Used to adjust the document scan position, the image print position, and the void area (image loss). (Simple adjustment) (This adjustment is the simple method of SIM 50-1.) (Document table mode)	Adjustment			Picture quality	Image position
	5	Used to adjust the print image position and the void area (image loss) on print paper. (Adjustment as the print engine) (This adjustment is reflected on all the FAX/printer/copy modes.)	Adjustment			Picture quality	
	6	Used to adjust the copy image position and void area (image loss) on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-7 (simple method).) (SPF mode)	Adjustment			Picture quality	
	7	Used to adjust the copy image position and void area (image loss) on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-6.) (SPF mode)	Adjustment			Picture quality	
	10	Used to adjust the print image off-center position. (Adjusted separately for each paper feed section.)	Adjustment			Picture quality	Image position
	12	Used to adjust the scan image off-center position. (Adjusted separately for each scan mode.)	Adjustment			Picture quality	Image position
	27	Used to adjust the image loss of the scan image in the FAX/scan mode.	Adjustment			Picture quality	
51	2	Used to adjust the contact pressure of paper on the resist roller of each section (each paper feed, duplex feed and SPF paper feed of the copier). (This adjustment is required when the print image position variations are considerably great or when paper jams occur frequently.)	Adjustment	Paper transport (Discharge/ Switchback/ Transport)		Operation	

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Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
53	6	Used to adjust the DSPF width detection level.	Adjustment			Operation	
	7	Used to enter the SPF width detection adjustment value.	Adjustment/Setup/ Operation data output/ Check (Display/Print)	DSPF		Operation	
	8	Used to adjust the document scan start position. (Used to adjust the scanner scan position in the SPF mode front scan.)	Adjustment				
55	1	Used to set the specifications of the engine control operations. (PCU PWB)	Setting			Operation	Specifications
	2	Used to set the specifications of the scanner control operations. (Scanner control PWB)	Setting			Operation	Specifications
	3	Used to set the specifications of the controller operations. (MFP control PWB)	Setting			Operation	Specifications
56	1	Used to transfer the MFP controller data. (Used to repair the PWB.)	Data transfer	MFP controller		Data transfer	
60	1	Used to check the MFP control (DRAM) operations (read/write).	Operation test/Check	ICU		Operation	
61	1	Used to check the operation of the scanner (write) unit (LSU).	Operation test/Check	Scanner (write) unit (LSU)		Operation	
	2	Used to adjust the laser power (absolute value) in the copy mode.	Adjustment	Scanner (write) unit (LSU)		Operation	
	3	Used to adjust the laser power (absolute value) in the FAX mode.	Adjustment	Scanner (write) unit (LSU)		Operation	
	4	Used to adjust the laser power (absolute value) in the printer mode.	Adjustment	Scanner (write) unit (LSU)		Operation	
62	1	Used to format the hard disk.	Data clear	MFP controller (HDD)		Clear	
	2	Used to check the operation of the hard disk (read/write). (Only in the model with a disk installed) (Partial check)	Operation test/Check	MFP controller (HDD)		Operation	
	3	Used to check the operation of the hard disk (read/write). (All areas check)	Operation test/Check	MFP controller (HDD)		Operation	
	6	Used to check the operations of the hard disk. (The self diag operation of the SMART function is executed.)	Operation test/Check	MFP controller (HDD)		Clear	
	7	Used to check the operations of the hard disk. (The result of the self diag operation of the SMART function is printed out.)	Operation test/Check	MFP controller (HDD)		Clear	
	8	Used to format the hard disk (the system area excluded).	Data clear	MFP controller (HDD)		Clear	
	10	Used to delete a job complete list (also to delete job log data)	Data clear	MFP controller (HDD)		Clear	
	11	Used to delete document filing data. (The management area (standard folder, user folder) is cleared.)	Data clear	MFP controller (HDD)		Clear	
63	1	Used to check the result of shading correction. (The shading correction data are displayed.)	Adjustment/Setup/ Operation data output/ Check (Display/Print)	Optical (Image scanning)		Operation	
	2	Used to execute shading.	Adjustment	Optical (Image scanning)		Operation	
	7	Used to adjust the white plate scan start position for shading. (Document table mode)	Adjustment	Laser (Exposure)		Operation	

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Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
64	1	Used to check the operation of the printer section (self-print operation), (The print pattern, the paper feed mode, the print mode, the print quantity, and the density can be optionally set.)	Operation test/Check			Operation	
65	1	Used to adjust the touch panel (LCD display section) detection position.	Adjustment	Operation (Display/Operation key)			
	2	Used to check the result of the touch panel (LCD display) detection position adjustment. (The coordinates are displayed.)	Adjustment/Setup/ Operation data output/ Check (Display/Print)	Operation (Display/Operation key)			
66	1	Used to change and check the FAX soft switch functions. (Used to change and check the functions provided for the FAX soft switches.)	Setting	FAX			
	2	Used to clear the FAX soft switch function data and to set to the default. (Excluding the adjustment values.)	Data clear	FAX		Data	
	3	Used to check the operation of the FAX PWB memory (read/write). (This adjustment is required when the PWB is replaced with a new one.)	Operation test/Check	FAX		Data	
	4	Used to check the output operation of data signals in each data output mode of FAX. (Used to check the operation of MODEM.) Send level: Max. (Only when FAX is installed)	Operation test/Check	FAX		Operation	
	5	Used to check the output operation of data signals in each data output mode of FAX. (Used to check the operation of MODEM.) An output is sent at the send level set by the soft switch. (Only when FAX is installed)	Operation test/Check	FAX		Operation	
	6	Used to print the confidential pass code. (Used when the confidential pass code is forgotten.) (Only when FAX is installed)	User data output/ Check (Display/Print)	FAX		Data	
	7	Used to print the image memory data (memory send/receive). (Only when FAX is installed)	User data output/ Check (Display/Print)	FAX		Data	
	8	Used to check the output operation of various sound signals of FAX. (Used to check the operation of the sound output IC.) Send level: Max. (Only when FAX is installed)	Operation test/Check	FAX		Operation	
	9	Used to check the output operation of various sound signals of FAX. (Used to check the operation of the sound output IC.) An output is sent at the send level set by the soft switch. (Only when FAX is installed)	Operation test/Check	FAX		Operation	
	10	Used to clear all data of the image memory (memory send/receive). The confidential data are also cleared at the same time. (Only when FAX is installed)	User data output/ Check (Display/Print)	FAX		Data	
	11	Used to check the output operation of FAX G3 mode 300bps. (Used to check the operation of MODEM.) Send level: Max. (Only when FAX is installed)	Operation test/Check	FAX		Operation	

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Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
66	12	Used to check the output operation of FAX G3 mode 300bps. (Used to check the operation of MODEM.) An output is send at the send level set by the soft switch. (Only when FAX is installed)	Operation test/Check	FAX		Operation	
	13	Used to enter (set) the number of FAX dial signal output test. (The dial number set by this simulation is outputted when the dial signal output test is made by SIM 66-14 - 16.) (Only when FAX is installed)	Setting			Data	
	14	Used to set the make time in the FAX pulse dial mode (10pps) and to test the dial signal output. (The dial number signal set by SIM 66-13 is outputted.) Used to check troubles in dialing and to check the operation. (Only when FAX is installed)	Setting/Operation test/ Check	FAX		Operation	
	15	Used to set the make time in the FAX pulse dial mode (20pps) and to test the dial signal output. (The dial number signal set by SIM 66-13 is outputted.) Used to check troubles in dialing and to check the operation. (Only when FAX is installed)	Setting/Operation test/ Check	FAX		Operation	
	16	Used to check the dial signal (DTMF) output in the FAX tone dial mode. (The dial number signal set by SIM 66-13 is outputted.) The send level can be set to an optional level. Used to check troubles in dialing and to check the operation. (Only when FAX is installed)	Setting/Operation test/ Check	FAX		Operation	
	17	Used to check the dial signal (DTMF) output in the FAX tone dial mode. Send level: Max. Used to check the operation. (Only when FAX is installed)	Setting	FAX		Operation	
	18	Used to check the dial signal (DTMF) output in the FAX tone dial mode. An output is sent at the send level set by the soft switch. Used to check the operation. (Only when FAX is installed)	Setting	FAX		Operation	
	19	Used to back-up the HDD data into the Flash memory (optional FAX expansion memory: AR-MM9). (Only when FAX is installed)	Data transfer	FAX		Data	
⚠	20	Used to read the back-up data by SIM 66-19 to the SRAM/HDD. (Only when FAX is installed)	Data transfer	FAX		Data	
	21	Used to print information related to FAX (various registrations, communication management, file management, system error protocol). (Only when FAX is installed)	Adjustment/Setup/ Operation data output/ Check (Display/Print)	FAX		Data	
	22	Used to adjust the handset volume. (Only when the FAX is installed.)	Setting	FAX		Operation	
	23	Used to download the FAX program. (Only when FAX is installed) Not used in the market. (For development)	Setting	FAX			
	24	Used to clear the FAST memory data. (Only when FAX is installed)	Clear	FAX		Data	

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Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
66	25	Used to register the FAX number for Modem dial-in. (Only when FAX is installed) Not used in the market. (For development)	Setting	FAX		Data	
	26	Used to register external telephone numbers for Modem dial-in. (Only when FAX is installed) Not used in the market. (For development)	Setting	FAX		Data	
	27	Used to register the transfer number for voice warp. (Only when FAX is installed) Not used in the market. (For development)	Setting	FAX		Data	
	28	Used to record voice messages. (Only when FAX is installed.)	Setting	FAX		Data	
	29	Used to clear data related to an address book (one-touch registration, program registration/ expansion, relay memory box registration, each table content).	Clear	FAX		Data	
	30	Used to check the change in the TEL/LIU status.	Operation test/Check	FAX		Operation	
	31	Used to check the relay operation.	Operation test/Check	FAX		Operation	
	32	Used to check the receive data (fixed data) from the line.	Operation test/Check	FAX		Operation	
	33	Used to check the signal (BUSY TONE/CNG/CED/FNET/DTMF) detection.	Operation test/Check	FAX		Operation	
	34	Used to measure the communication time of test image data.	Operation test/Check	FAX		Operation	
	35	Modem program reloading (Only when FAX is installed) Not used in the market. (For development)	Setting	FAX		Data	
	36	Used to check interface between MFPC controller and MDMC. (Check of the data line or the command line)	Operation test/Check	FAX		Operation	
	39	Used to set the destination specifications.	Setting	FAX		Specifications	Operation
	60	Used to set the ACR data.	Setting	FAX		Operation	
67	2	Used to check the operation of the parallel I/F of the printer. (This simulation is for production only, and requires a special tool for execution. Not used in the market.)	Operation test/Check	MFP controller		Operation	Interface/ Communication
	11	Used to set YES/NO of the parallel I/F select signal of the printer.	Setting	MFP controller		Operation	Interface/ Communication
	16	Used to check the operation of the network card.	Operation test/Check	MFP controller		Operation	Interface/ Communication

C. Details

1

1-1

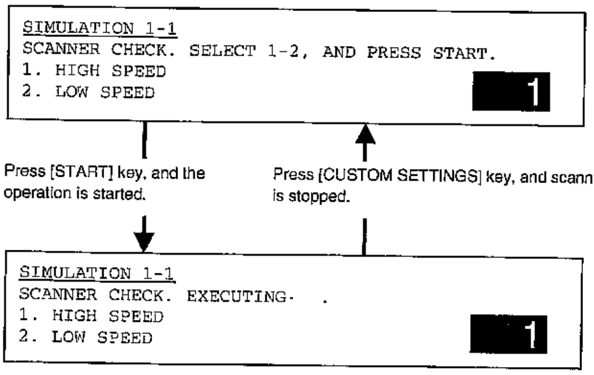
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the scanner (read) unit and its control circuit.
Section	Optical (Image scanning)
Item	Operation

Operation/Procedure

1) Select the operation mode with 10-key.
2) Press START key.

   The scanner performs scanning at the speed corresponding to the operation mode.

1	HIGH SPEED	High speed (220mm/s)
2	LOW SPEED	Low speed (110mm/s)



```
SIMULATION 1-1
SCANNER CHECK. SELECT 1-2, AND PRESS START.
1. HIGH SPEED
2. LOW SPEED                                    1
```

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and scanning is stopped.

```
SIMULATION 1-1
SCANNER CHECK. EXECUTING·   .
1. HIGH SPEED
2. LOW SPEED                                    1
```

1-2

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of sensor and detector in the scanning (read) section and the related circuit.
Section	Optical (Image scanning)
Item	Operation

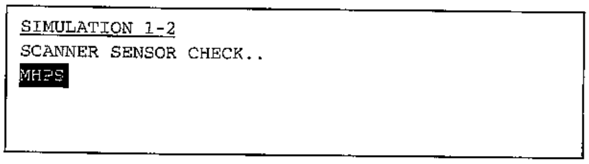
Operation/Procedure

The sensor and detector operation conditions are displayed.

The active sensors and detectors are highlighted.

- The scanner (read) unit is in the home position.: "MHPS" section is highlighted.
- The scanner (read) unit is not in the home position.: "MHPS" is normally displayed.

MHPS	Optical system home position



```
SIMULATION 1-2
SCANNER SENSOR CHECK..
MHPS
```

2

2-1

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the automatic document feeder unit and the control circuit.
Section	DSPF
Item	Operation

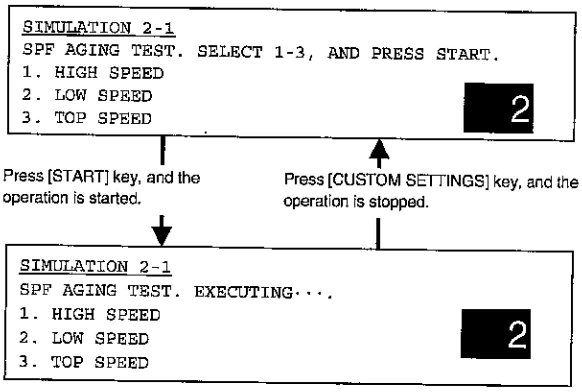
Operation/Procedure

1) Select the operation mode with 10-key.
2) Press START key.

   The SPF repeat paper feed, transport, and paper exit at the speed corresponding to the operation mode.

   The operation can be stopped by [CUSTOM SETTINGS] key.

1	HIGH SPEED (220 mm/sec)	High speed
2	LOW SPEED (110 mm/sec)	Low speed
3	TOP SPEED (360 mm/sec)	Top speed



```
SIMULATION 2-1
SPF AGING TEST. SELECT 1-3, AND PRESS START.
1. HIGH SPEED
2. LOW SPEED
3. TOP SPEED                                    2
```

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped.

```
SIMULATION 2-1
SPF AGING TEST. EXECUTING····.
1. HIGH SPEED
2. LOW SPEED
3. TOP SPEED                                    2
```

2-2

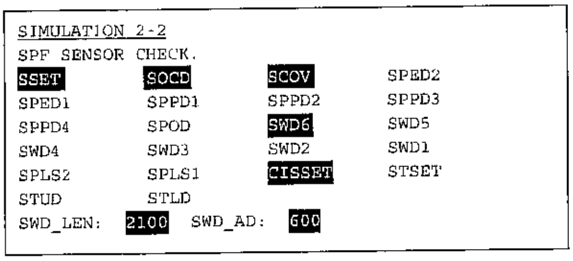
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the sensors and detectors in the automatic document feeder unit and the related circuits.
Section	DSPF
Item	Operation

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The active sensors and detectors are highlighted.

SSET	SPF sensor
SOCD	Open/close sensor
SCOV	Paper feed cover sensor
SPED2	Document set sensor (Lower)
SPED1	Document set sensor (Upper)
SPPD1	Document transport sensor 1
SPPD2	Document transport sensor 2
SPPD3	Document transport sensor 3
SPPD4	Document transport sensor 4
SPOD	Document exit sensor
SWDn	Document width sensor (n → 1 (inside) - 6 (outside))
SPLSn	Document length sensor (n → 1 (inside) - 2 (outside))
CISSET	CIS installation detection
STSET	Stamp unit installation sensor
STUD	Tray upper limit sensor
STLD	Tray lower limit sensor
SWD_LEN	SPF guide plate position (unit: 0.1mm)
SWD_AD	SPF document width detection volume output AD value



```
SIMULATION 2-2
SPF SENSOR CHECK.
SSET          SOCD         SCOV         SPED2
SPED1         SPPD1        SPPD2        SPPD3
SPPD4         SPOD         SWD6         SWD5
SWD4          SWD3         SWD2         SWD1
SPLS2         SPLS1        CISSET       STSET
STUD          STLD
SWD_LEN:  2100   SWD_AD:  600
```

2-3 [illegible]

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the loads in the automatic document feeder unit and the control circuits.
Section	DSPF
Item	Operation

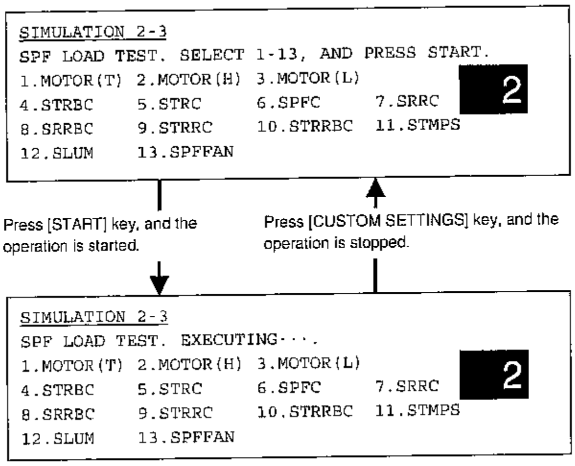
Operation/Procedure

1) Select the number corresponding to the target of operation check with 10-key.
2) Press START key.

   The load selected in procedure 1 is operated.

Press [CUSTOM SETTINGS] key to stop the operation of the load.

1	MOTOR (T)	Motor top speed
2	MOTOR (H)	Motor high speed
3	MOTOR (L)	Motor low speed
4	STRBC	Document transport brake clutch
5	STRC	Document feed transport clutch
6	SPFC	Document fed clutch
7	SRRC	Document resist clutch
8	SRRBC	Document resist brake clutch
9	STRRC	Document feed resist clutch
10	STRRBC	Document feed resist brake clutch
11	STMPS	Stamp solenoid
12	SLUM	Lift up motor
13	SPFFAN	SPF fan motor



```
SIMULATION 2-3
SPF LOAD TEST. SELECT 1-13, AND PRESS START.
1.MOTOR(T)  2.MOTOR(H)  3.MOTOR(L)
4.STRBC     5.STRC      6.SPFC      7.SRRC       2
8.SRRBC     9.STRRC     10.STRRBC   11.STMPS
12.SLUM     13.SPFFAN
```

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped.

```
SIMULATION 2-3
SPF LOAD TEST. EXECUTING···.
1.MOTOR(T)  2.MOTOR(H)  3.MOTOR(L)
4.STRBC     5.STRC      6.SPFC      7.SRRC       2
8.SRRBC     9.STRRC     10.STRRBC   11.STMPS
12.SLUM     13.SPFFAN
```

3

3-2 [illegible]

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of sensor and detector in the finisher and the related circuit.
Section	Finisher
Item	Operation

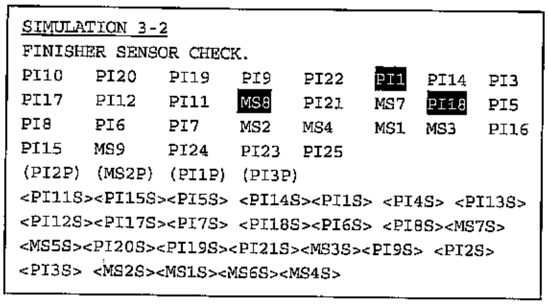
Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The active sensors and detectors are highlighted.

PI1	Entry port paper detection	
PI1P	Punch width resist HP detection	When the punch unit is installed
PI1S	Paper holding plate motor clock detection	When the saddle unit is installed
PI2P	Punch motor clock detection	When the punch unit is installed
PI2S	Front door open detection	When the saddle unit is installed
PI3	Paper exit detection	
PI3P	Punch HP detection	When the punch unit is installed
PI3S	Paper exit cover open detection	When the saddle unit is installed
PI4S	Paper folding motor clock detection	When the saddle unit is installed
PI5	Shutter open detection	
PI5S	Alignment plate HP detection	When the saddle unit is installed
PI6	Alignment guide HP detection	
PI6S	Saddle tray paper detection	When the saddle unit is installed
PI7	Staple shift HP detection	
PI7S	Paper positioning plate HP detection	When the saddle unit is installed
PI8	Tray 1 HP detection	
PI8S	Paper positioning plate HP detection	When the saddle unit is installed
PI9	Tray 1 lift motor clock detection 1	
PI9S	Entry port cover open detection	When the saddle unit is installed
PI10	Paper exit motor clock detection	
PI11	Tray 1 paper detection	
PI11S	Saddle paper exit detection	When the saddle unit is installed
PI12	Tray 2 paper detection	
PI12S	Semi-circular roller phase detection	When the saddle unit is installed
PI13S	Guide HP detection	When the saddle unit is installed
PI14	Buffer path detection	
PI14S	Paper holding plate lead edge position detection	When the saddle unit is installed
PI15	Finisher joint detection	
PI15S	Paper holding plate lead edge position detection	When the saddle unit is installed
PI16	Door open detection	
PI17	Buffer path entry port paper detection	
PI17S	Vertical path paper detection	When the saddle unit is installed
PI18	Oscillating guide open detection	
PI18S	Saddle No. 1 paper detection	When the saddle unit is installed

PI19	Tray lift motor clock detection 2	
PI19S	Saddle No. 2 paper detection	When the saddle unit is installed
PI20	Oscillation guide clock detection	
PI20S	Saddle No. 3 paper detection	When the saddle unit is installed
PI21	Staple lead edge detection	
PI21S	Paper folding HP detection	When the saddle unit is installed
PI22	Staple dive HP detection	
PI23	Tray 2 lift motor clock detection 1	
PI24	Tray 2 lift motor clock detection 2	
PI25	Tray 2 HP detection	
MS1	Front door / Upper door open detection	
MS1S	Saddle entry port door detection	When the saddle unit is installed
MS2	Oscillation guide close detection	
MS2P	Punch front door open detection	When the punch unit is installed
MS2S	Front door open detection	When the saddle unit is installed
MS3	Safety area detection	
MS3S	Paper exit door open detection	When the saddle unit is installed
MS4	Shutter close detection	
MS4S	Saddle staple presence detection 2	When the saddle unit is installed
MS5S	Stitch operation HP detection 2	When the saddle unit is installed
MS6S	Saddle staple presence detection 1	When the saddle unit is installed
MS7	Cartridge detection	
MS7S	Stitch operation HP detection 1	When the saddle unit is installed
MS8	Staple empty detection	
MS9	Tray approaching detection	



```
SIMULATION 3-2
FINISHER SENSOR CHECK.
PI10   PI20   PI19   PI9    PI22   PI1    PI14   PI3
PI17   PI12   PI11   MS8    PI21   MS7    PI18   PI5
PI8    PI6    PI7    MS2    MS4    MS1    MS3    PI16
PI15   MS9    PI24   PI23   PI25
(PI2P) (MS2P) (PI1P) (PI3P)
<PI11S><PI15S><PI5S> <PI14S><PI1S> <PI4S> <PI13S>
<PI12S><PI17S><PI7S> <PI18S><PI6S> <PI8S><MS7S>
<MS5S><PI20S><PI19S><PI21S><MS3S><PI9S> <PI2S>
<PI3S> <MS2S><MS1S><MS6S><MS4S>
```

( ) : Added when the punch unit is installed.

< > : Added when the saddle unit is installed.

3-3

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the load in the finisher and the control circuit.
Section	Finisher
Item	Operation

Operation/Procedure

1) Select the number corresponding to the target of operation check with 10-key.
2) Press START key.

   The load selected in procedure 1 is operated.

   Press [CUSTOM SETTINGS] key to stop the operation of the load.

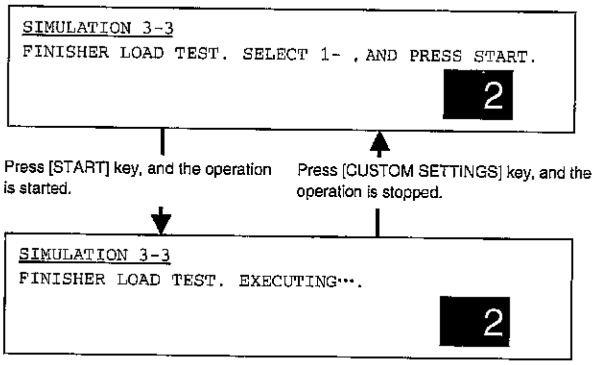
1	SL7	Belt wait solenoid
2	SL6	Wait solenoid
3	SL5	Paddle solenoid
4	SL3	Buffer exit port solenoid
5	SL2	Buffer entry port solenoid
6	SL1	Flapper solenoid
7	M10	Tray 2 lift motor
8	M9	Entry port transport motor
9	M8	No. 2 transport motor
10	M7	Oscillation motor
11	M6	Staple motor
12	M5	Tray 1 lift motor
13	M4	Stapler shift motor
14	M3	Alignment motor
15	M2	Paper exit motor
16	M1	No. 1 transport motor

(When the punch unit is installed)

17	M2P	Punch side resist motor
18	M1P	Punch motor

(When the saddle unit is installed.)

19	SL4S	Transport plate contact solenoid
20	SL2S	No. 2 paper deflection plate solenoid
21	SL1S	No. 1 paper deflection plate solenoid
22	M8S	Paper holding motor
23	M7S	Stitch motor: Front
24	M6S	Stitch motor: Rear
25	M5S	Saddle alignment motor
26	M4S	Paper positioning motor
27	M3S	Guide motor
28	M2S	Paper folding motor
29	M1S	Saddle transport motor



```
SIMULATION 3-3
FINISHER LOAD TEST. SELECT 1- , AND PRESS START.
                                              2
```

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped.

```
SIMULATION 3-3
FINISHER LOAD TEST. EXECUTING….
                                              2
```

3-10

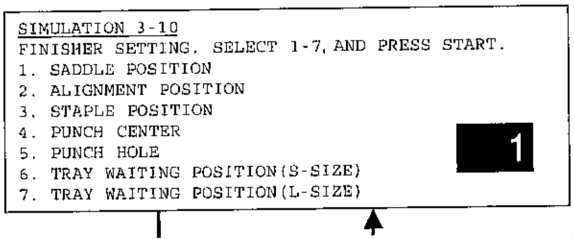
Purpose	Adjustment
Function (Purpose)	Finisher (AR-F16) adjustment
Section	Finisher
Item	Operation

Operation/Procedure

1) Select the number corresponding to the target of operation check with 10-key.
2) Press [START] key.
3) Enter the adjustment value with 10-key.
4) Press [START] key. (The entered value is stored.)

	Item	Set range
1	Saddle stitch/folding position adjustment	192 - 208, 1STEP: 0.25 mm
2	Alignment position adjustment	2 - 18, 1STEP: 0.35 mm
3	Staple binding position adjustment	68 - 132, 1STEP: 0.152 mm
4	Punch center adjustment	37 - 63, 1STEP: 0.15mm

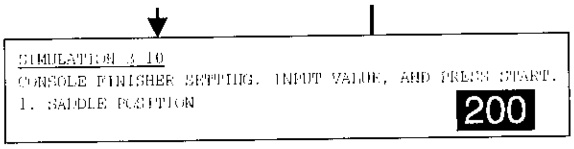
	Item	Set range
5	Punch hole position adjustment (Paper feed direction)	35 - 57, 1STEP: 0.26mm
6	Stack tray standby position adjustment (Small size)	5 - 35, 1STEP: 1mm
7	Stack tray standby position adjustment (Large size)	5 - 35, 1STEP: 1mm



```
SIMULATION 3-10
FINISHER SETTING. SELECT 1-7, AND PRESS START.
1. SADDLE POSITION
2. ALIGNMENT POSITION
3. STAPLE POSITION
4. PUNCH CENTER
5. PUNCH HOLE                                      1
6. TRAY WAITING POSITION(S-SIZE)
7. TRAY WAITING POSITION(L-SIZE)
```

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped.



```
SIMULATION 3 10
CONSOLE FINISHER SETTING. INPUT VALUE, AND PRESS START.
1. SADDLE POSITION                             200
```

3-30

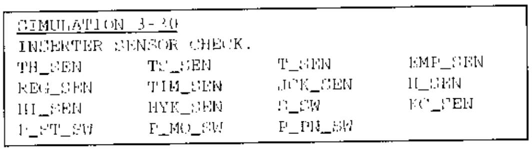
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the sensors and detectors in the inserter.
Section	Inserter
Item	

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The active sensors and detectors are highlighted.

TH_SEN	Sub tray pull-out detection
TS_SEN	Sub tray storage detection
T_SEN	Inserter tray paper size detection
EMP_SEN	Inserter tray empty detection
REG_SEN	Inserter resist sensor
TIM_SEN	Inserter timing sensor detection
JCK_SEN	Inserter cover open/close sensor
H_SEN	Inserter reverse sensor
HI_SEN	Inserter paper exit sensor
HYK_SEN	Inserter reverse unit open/close sensor
S_SW	Inserter set SW
KC_SEN	Base cover open/close sensor
P_ST_SW	Inserter start SW
P_MO_SW	Inserter staple mode select SW
P_PN_SW	Inserter punch select SW



```
SIMULATION 3-30
INSERTER SENSOR CHECK.
TH_SEN      TS_SEN      T_SEN       EMP_SEN
REG_SEN     TIM_SEN     JCK_SEN     H_SEN
HI_SEN      HYK_SEN     S_SW        KC_SEN
P_ST_SW     P_MO_SW     P_PN_SW
```

3-31

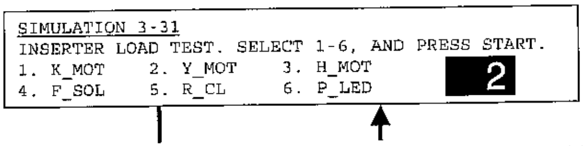
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the loads in the inserter and the related circuits.
Section	Inserter
Item	Operation

Operation/Procedure

1) Select the number corresponding to the target of operation check with 10-key.
2) Press [START] key.
   The load selected in procedure 1 is operated.

Press [CUSTOM SETTINGS] key to stop the operation of the load.

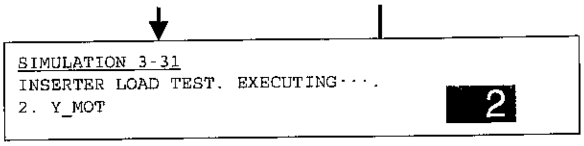
1	K_MOT	Reverse motor
2	Y_MOT	Horizontal transport motor
3	H_MOT	Inserter reverse
4	F_SOL	Inserter flapper solenoid
5	R_CL	Inserter resist clutch
6	P_LED	Inserter operation panel upper LED



```
SIMULATION 3-31
INSERTER LOAD TEST. SELECT 1-6, AND PRESS START.
1. K_MOT      2. Y_MOT      3. H_MOT           2
4. F_SOL      5. R_CL       6. P_LED
```

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped.



```
SIMULATION 3-31
INSERTER LOAD TEST. EXECUTING···.
2. Y_MOT                                       2
```

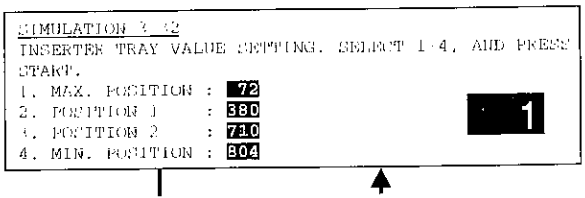
3-32

Purpose	Setting (Adjustment)
Function (Purpose)	Inserter paper width detection level setting.
Section	Inserter
Item	Operation

Operation/Procedure

1) Select the number corresponding to the adjustment item with 10-key.
2) Press [START] key.
3) Enter the setting (adjustment) value with 10-key.
4) Press [START] key.

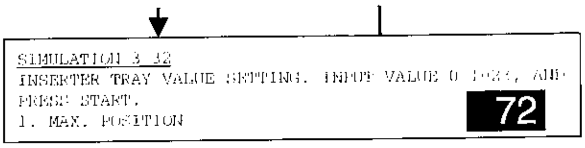
1	MAX. POSITION	Max. position
2	POSITION 1	Adjustment point 1
3	POSITION 2	Adjustment point 2
4	MIN. POSITION	Min. width



```
SIMULATION 3 32
INSERTER TRAY VALUE SETTING. SELECT 1-4, AND PRESS
START.
1. MAX. POSITION :  72
2. POSITION 1    : 380                         1
3. POSITION 2    : 710
4. MIN. POSITION : 804
```

Press [START] key.

Press [CUSTOM SETTINGS] key.



```
SIMULATION 3 32
INSERTER TRAY VALUE SETTING. INPUT VALUE 0 [illegible], AND
PRESS START.
1. MAX. POSITION                                72
```

4

4-2

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the sensors and detectors in the paper feed section (large capacity tray) and the related circuit.
Section	Paper feed
Item	Operation

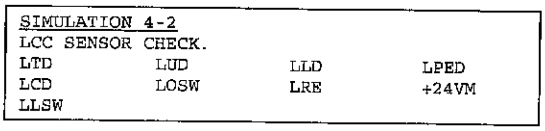
Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The active sensors and detectors are highlighted.

<LCC>

LTD	Transport sensor
LUD	Tray upper limit sensor
LLD	Tray lower limit sensor
LPED	Tray paper presence/empty sensor
LTOD	Main unit connection detection sensor
LCD	Tray insertion detection
LOSW	Upper open/close detection SW
LRE	Lift motor encoder sensor
+24VM	24V power monitor
LLSW	Upper limit SW



```
SIMULATION 4-2
LCC SENSOR CHECK.
LTD            LUD            LLD            LPED
LCD            LOSW           LRE            +24VM
LLSW
```

4-3

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the loads in the paper feed section (large capacity tray) and the related circuit.
Section	Paper feed
Item	Operation

Operation/Procedure

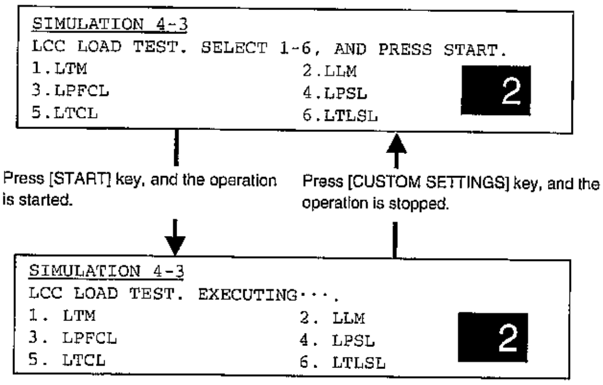
1. Select the number corresponding to the target of operation check with 10-key.
2. Press [START] key.

   The load selected in procedure 1 is operated.

   Press [CUSTOM SETTINGS] key to stop the operation of the load.

<Side LCC>

1	LTM	LCC transport motor
2	LLM	LCC lift motor
3	LPFCL	Paper feed clutch
4	LPSL	LCC paper feed clutch
5	LTCL	LCC transport clutch
6	LTLSL	Tray lock solenoid D



```
SIMULATION 4-3
LCC LOAD TEST. SELECT 1-6, AND PRESS START.
1.LTM                     2.LLM
3.LPFCL                   4.LPSL              2
5.LTCL                    6.LTLSL
```

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped.

```
SIMULATION 4-3
LCC LOAD TEST. EXECUTING···.
1. LTM                    2. LLM
3. LPFCL                  4. LPSL             2
5. LTCL                   6. LTLSL
```

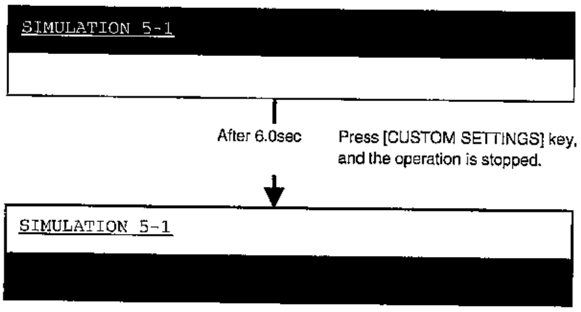
5

5-1

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the display, LCD in the operation panel, and control circuit.
Section	Operation (Display/Operation key)
Item	Operation

Operation/Procedure

The LCD is changed as shown below. (The contrast changes every 2sec from the current level to MAX → MIN → the current level. During this period, each LED is lighted.



```
SIMULATION 5-1
```

After 6.0sec

Press [CUSTOM SETTINGS] key, and the operation is stopped.

```
SIMULATION 5-1
```

5-2

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the heater lamp and the control circuit.
Section	Fixing (Fusing)
Item	Operation

Operation/Procedure

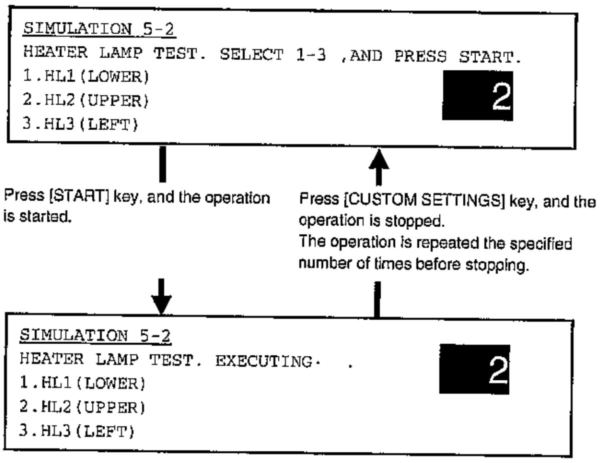
1) Select the number corresponding to the target of operation check with 10-key.
2) Press [START] key.

   The load selected in procedure 1 performs ON/OFF operation.

   Press [CUSTOM SETTINGS] key to stop the operation of the load.

   The ON/OFF operation of the selected heater lamp is repeated every 500ms five times.

1	HL1 (LOWER)	Heater lamp 1 (Lower)
2	HL2 (UPPER)	Heater lamp 2 (Upper)
3	HL3 (LEFT)	Heater lamp 3 (Left)



```
SIMULATION 5-2
HEATER LAMP TEST. SELECT 1-3 ,AND PRESS START.
1.HL1(LOWER)
2.HL2(UPPER)                                   2
3.HL3(LEFT)
```

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped. The operation is repeated the specified number of times before stopping.

```
SIMULATION 5-2
HEATER LAMP TEST. EXECUTING·  .
1.HL1(LOWER)                                   2
2.HL2(UPPER)
3.HL3(LEFT)
```

5-3

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the scanner lamp and the control circuit.
Section	Optical (Image scanning)
Item	Operation

Operation/Procedure

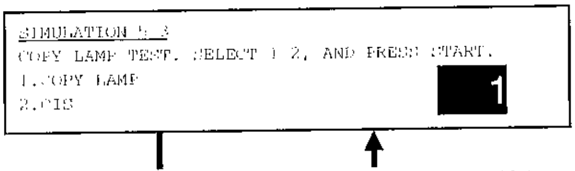
1) Select the number corresponding to the target of operation check with 10-key.
2) Press [START] key.

   The load selected in procedure 1 turns ON for 10sec.

   Press [CUSTOM SETTINGS] key to stop the operation.

   The copy lamp or CIS is turned on for 10sec and turned off.

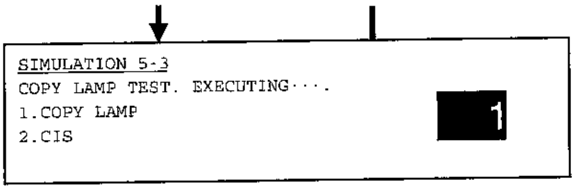
NOTE: CIS: only when the DSPF is installed.



```
SIMULATION 5-3
COPY LAMP TEST. SELECT 1 2, AND PRESS START.
1.COPY LAMP                                  1
2.CIS
```

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped after 10sec.



```
SIMULATION 5-3
COPY LAMP TEST. EXECUTING・・・.
1.COPY LAMP                                  1
2.CIS
```

5-4

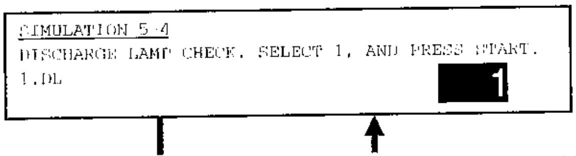
Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the discharge lamp and the related circuit.
Section	Process
Item	Operation

Operation/Procedure

1) Select the number corresponding to the target of operation check with 10-key.
2) Press [START] key.

   The load selected in procedure 1 turns ON for 30sec.

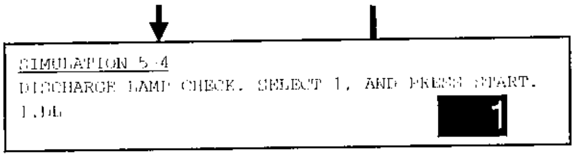
   Press [CUSTOM SETTINGS] key to stop the operation.



```
SIMULATION 5-4
DISCHARGE LAMP CHECK. SELECT 1, AND PRESS START.
1.DL                                         1
```

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped after 30sec.



```
SIMULATION 5-4
DISCHARGE LAMP CHECK. SELECT 1, AND PRESS START.
1.DL                                         1
```

6

6-1

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the paper transport system loads and the control circuit.
Section	Paper transport (Discharge/Switchback/Transport)
Item	Operation

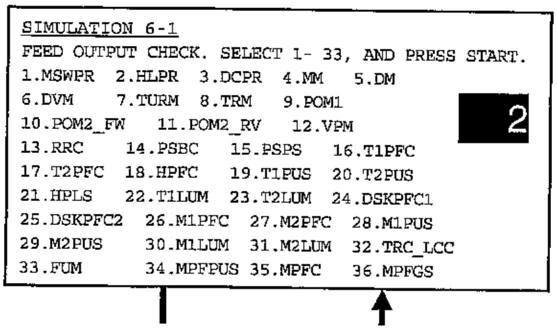
Operation/Procedure

1) Select the number corresponding to the target of operation check with 10-key.
2) Press [START] key.

   The load selected in procedure 1 operates.

   Press [CUSTOM SETTINGS] key to stop the operation.

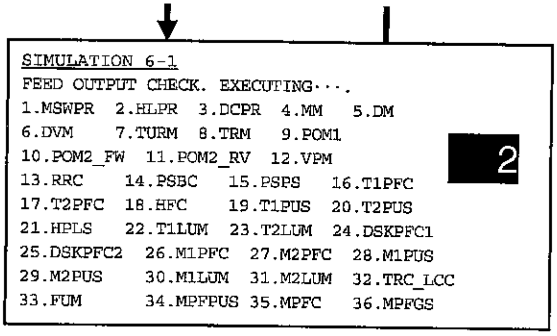
1	MSWPR	MSW reset signal
2	HLPR	Heater power relay signal
3	DCPR	DC power relay signal
4	MM	Main motor
5	DM	Drum motor
6	DVM	Developing motor
7	TURM	Transfer separation motor
8	TRM	PS front motor
9	POM1	Paper exit motor 1
10	POM2_FW	Paper exit motor 2 forward rotation
11	POM2_RV	Paper exit motor 2 reverse rotation
12	VPM	Paper transport motor
13	RRC	Resist roller clutch signal
14	PSBC	Brake clutch signal
15	PSPS	Separation pawl
16	T1PFC	Tray 1 paper feed clutch
17	T2PFC	Tray 2 paper feed clutch
18	HPFC	Horizontal transport clutch
19	T1PUS	Tray 1 pickup solenoid
20	T2PUS	Tray 2 pickup solenoid
21	HPLS	Relay path clock solenoid
22	T1LUM	Tray 1 lift-up motor
23	T2LUM	Tray 2 lift-up motor
24	DSKPFC1	Desk paper transport clutch upstream side
25	DSKPFC2	Desk paper transport clutch downstream side
26	M1PFC	Tray 3 paper feed clutch
27	M2PFC	Tray 4 paper feed clutch
28	M1PUS	Tray 3 pickup solenoid
29	M2PUS	Tray 4 pickup solenoid
30	M1LUM	Tray 3 lift-up motor
31	M2LUM	Tray 4 lift-up motor
32	TRC_LCC	Desk clutch sync signal
33	FUM	Fusing motor
34	MPFPUS	Manual pickup solenoid
35	MPFC	Manual paper feed clutch signal
36	MPFGS	Manual gate solenoid



```
SIMULATION 6-1
FEED OUTPUT CHECK. SELECT 1- 33, AND PRESS START.
1.MSWPR  2.HLPR  3.DCPR  4.MM   5.DM
6.DVM     7.TURM  8.TRM   9.POM1                2
10.POM2_FW   11.POM2_RV   12.VPM
13.RRC     14.PSBC    15.PSPS    16.T1PFC
17.T2PFC  18.HPFC    19.T1PUS  20.T2PUS
21.HPLS    22.T1LUM  23.T2LUM  24.DSKPFC1
25.DSKPFC2  26.M1PFC  27.M2PFC  28.M1PUS
29.M2PUS     30.M1LUM  31.M2LUM  32.TRC_LCC
33.FUM        34.MPFPUS 35.MPFC   36.MPFGS
```

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped immediately or after repeating the operation several times.



```
SIMULATION 6-1
FEED OUTPUT CHECK. EXECUTING···.
1.MSWPR  2.HLPR  3.DCPR  4.MM   5.DM
6.DVM     7.TURM  8.TRM   9.POM1                2
10.POM2_FW  11.POM2_RV  12.VPM
13.RRC     14.PSBC    15.PSPS    16.T1PFC
17.T2PFC  18.HFC     19.T1PUS  20.T2PUS
21.HPLS    22.T1LUM  23.T2LUM  24.DSKPFC1
25.DSKPFC2  26.M1PFC  27.M2PFC  28.M1PUS
29.M2PUS     30.M1LUM  31.M2LUM  32.TRC_LCC
33.FUM        34.MPFPUS 35.MPFC   36.MPFGS
```

6-2

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of each fan motor and its control circuit.
Section	Other
Item	Operation

Operation/Procedure

1) Select the number corresponding to the target of operation check with 10-key.
2) Press [START] key.

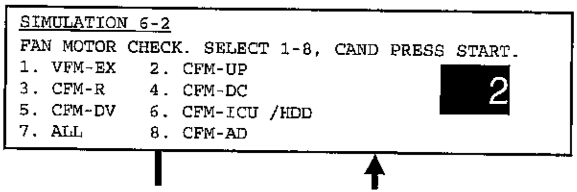
   The load selected in procedure 1 operates.

   Press [CUSTOM SETTINGS] key to stop the operation.

⚠	1	VFM-EX	Exhaust fan motor (VFM-EX1, 2, 3, VFM-BKL, VFM-BKU)
⚠	2	CFM-UP	Heat exhaust fan motor (Paper exit upper) (CFM-U1, 2, 3, VFM-BKR)
⚠	3	CFM-R	Cooling fan motor (Right side) (CFM-R1, 2, 3)
⚠	4	CFM-DC	Cooling fan motor (Power source) (CFM-DC1, 2)
⚠	5	CFM-DV	Cooling fan motor (Developing) (CFM-DV)
⚠	6	CFM-ICU /HDD	Cooling fan motor (Controller/HDD) (CFM-ICU/HDD)
	7	ALL	All fans control*
⚠	8	CFM-AD	Cooling fan motor (paper exit center) (CFM-U4)

* All fans: All the fans controlled by the engine.

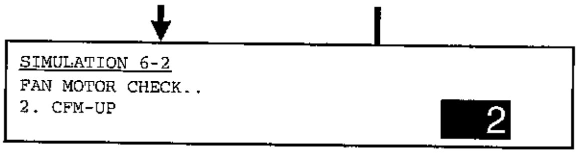
⚠ (Exhaust fan motor, heat exhaust fan motor (paper exit upper), cooling fan motor (right side) cooling fan motor (power source), cooling fan motor (developing), cooling fan motor (paper exit center))



```
SIMULATION 6-2
FAN MOTOR CHECK. SELECT 1-8, CAND PRESS START.
1. VFM-EX    2. CFM-UP
3. CFM-R     4. CFM-DC                          2
5. CFM-DV    6. CFM-ICU /HDD
7. ALL       8. CFM-AD
```

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped.



```
SIMULATION 6-2
FAN MOTOR CHECK..
2. CFM-UP                                       2
```

6-3

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the transfer unit and the related circuit.
Section	Process (Transfer)
Item	

Operation/Procedure

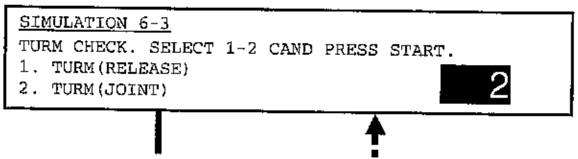
1) Select the number corresponding to the target of operation check with 10-key.
2) Press [START] key.

The transfer belt performs contact/separation with the OPC drum.

Press [CUSTOM SETTINGS] key to stop the operation.

NOTE: Before disassembling the transfer unit, use this simulation to separate the transfer unit from the OPC drum.

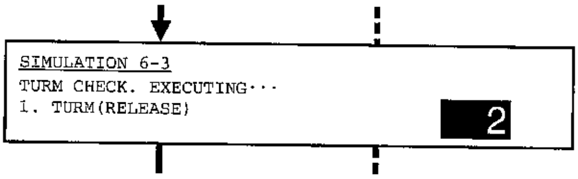
1	TURM (RELEASE)	Transfer unit separation state
2	TURM (JOINT)	Transfer unit contact state



```
SIMULATION 6-3
TURM CHECK. SELECT 1-2 CAND PRESS START.
1. TURM(RELEASE)
2. TURM(JOINT)                                  2
```

Press [START] key, and the operation is started.

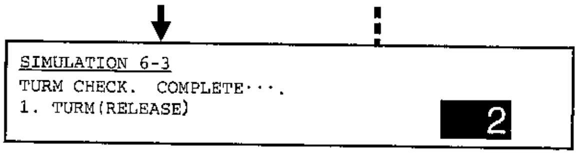
Press [CUSTOM SETTINGS] key, and the operation is stopped immediately or after repeating the operation several times.



```
SIMULATION 6-3
TURM CHECK. EXECUTING···
1. TURM(RELEASE)                                2
```

After completion

Press [CUSTOM SETTINGS] key to stop the operation.



```
SIMULATION 6-3
TURM CHECK. COMPLETE···.
1. TURM(RELEASE)                                2
```

7

7-1

Purpose	Setting
Function (Purpose)	Used to set the operating conditions of aging.
Section	
Item	Operation

Operation/Procedure

1) Select the number corresponding to the operating condition of aging with 10-key.

   The combined mode of 0 - 6 mode and 10, 20, or 30 mode can be set.

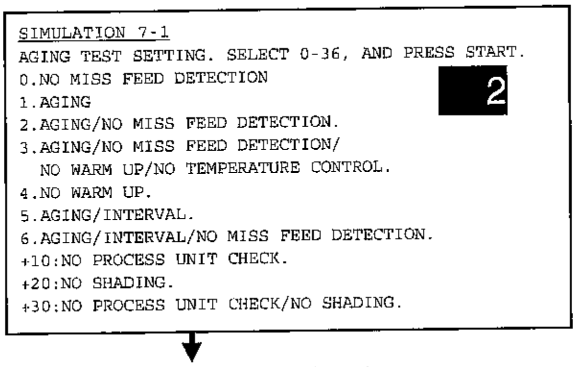
   In that case, the number corresponding to one of 0 - 6 mode and the number corresponding to one of 10, 10, and 30 mode are added and the sum number is entered.

2) Press [START] key.

   The condition selected in procedure 1) is set.

The setting of this simulation is kept valid until the power is turned off.

0	NO MISS FEED DETECTION	No jam detection
1	AGING	Aging mode
2	AGING/NO MISS FEED DETECTION.	No jam detection, aging mode
3	AGING/NO MISS FEED DETECTION/NO WARM UP/ NO TEMPERATURE CONTROL.	No jam detection/ no warm-up/ no fusing temperature control, aging mode
4	NO WARM UP.	No warm-up
5	AGING/INTERVAL.	Intermittent aging mode
6	AGING/INTERVAL/NO MISS FEED DETECTION.	No jam detection intermittent aging mode
+10	NO PROCESS UNIT CHECK.	Above +10: No process unit (including the developing unit) detection
+20	NO SHADING.	Above +20: No shading
+30	NO PROCESS UNIT CHECK/ NO SHADING.	Above +30: No process unit detection /no shading



```
SIMULATION 7-1
AGING TEST SETTING. SELECT 0-36, AND PRESS START.
0.NO MISS FEED DETECTION                              2
1.AGING
2.AGING/NO MISS FEED DETECTION.
3.AGING/NO MISS FEED DETECTION/
  NO WARM UP/NO TEMPERATURE CONTROL.
4.NO WARM UP.
5.AGING/INTERVAL.
6.AGING/INTERVAL/NO MISS FEED DETECTION.
+10:NO PROCESS UNIT CHECK.
+20:NO SHADING.
+30:NO PROCESS UNIT CHECK/NO SHADING.
```

Press [START] key to start registration and operation.
The operation mode is kept until the power is turned off or setting is made again.

7-6

Purpose	Setting
Function (Purpose)	Used to set the intermittent aging cycle.
Section	
Item	Operation

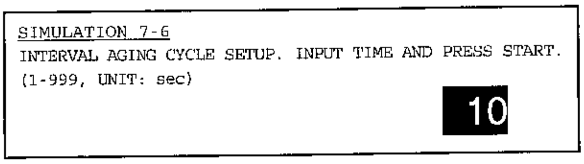
Operation/Procedure

1) Enter the intermittent aging cycle (unit: sec) with 10-key.
2) Press [START] key.

   The time entered in procedure 1) is set.

* Set range of interval time: 1 - 999 (sec)

Set the intermittent aging mode cycle of 7-1 with 10-key. (Unit: sec)



```
SIMULATION 7-6
INTERVAL AGING CYCLE SETUP. INPUT TIME AND PRESS START.
(1-999, UNIT: sec)
                                                     10
```

7-8

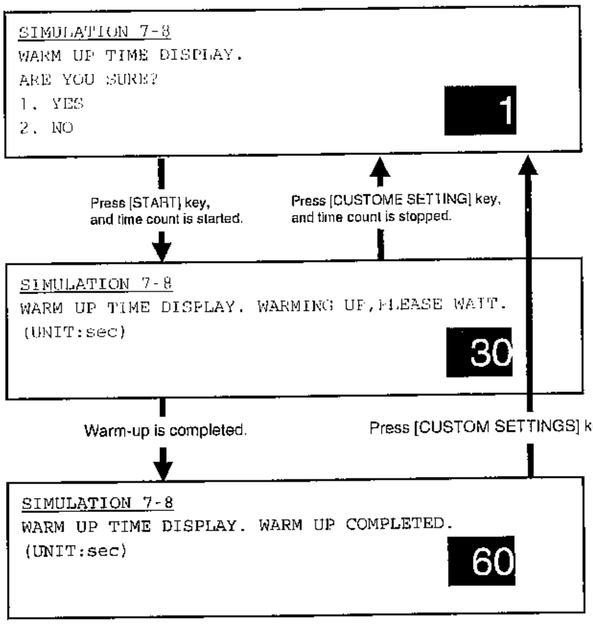
Purpose	Setting
Function (Purpose)	Used to set the warm-up time display YES/NO.
Item	Operation

Operation/Procedure

1) Select the number corresponding to the warm-up time display YES/NO.
2) Press [START] key, and the number selected in procedure 1) is set.

* The setting of this simulation is kept valid until the power is turned off.

The warm-up time is displayed in the unit of second.



```
SIMULATION 7-8
WARM UP TIME DISPLAY.
ARE YOU SURE?
1. YES                                                1
2. NO
```

```
SIMULATION 7-8
WARM UP TIME DISPLAY. WARMING UP,PLEASE WAIT.
(UNIT:sec)
                                                     30
```

```
SIMULATION 7-8
WARM UP TIME DISPLAY. WARM UP COMPLETED.
(UNIT:sec)
                                                     60
```

Press [START] key,
and time count is started.
Press [CUSTOME SETTING] key,
and time count is stopped.
Warm-up is completed.
Press [CUSTOM SETTINGS] key.

8

8-1

Purpose	Adjustment/Operation test/Check
Function (Purpose)	Used to check and adjust the operations of the developing voltage of each color and the control circuit.
Section	Image process (Photoconductor/Developing/Transfer/ Cleaning)

Operation/Procedure

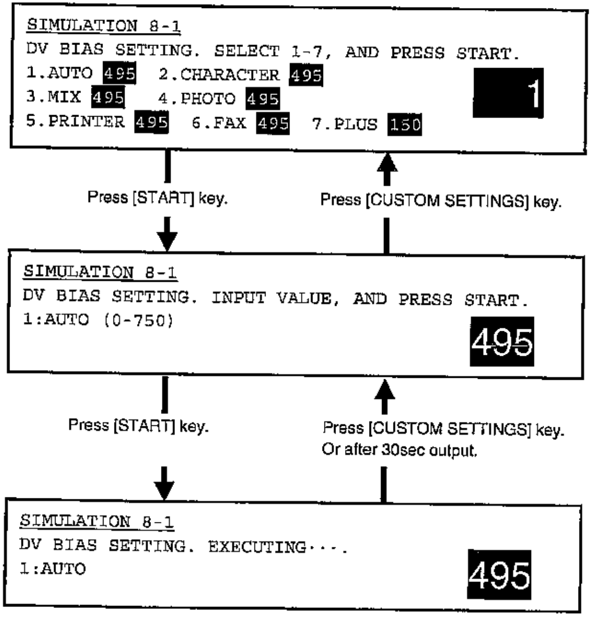
1) Enter the number corresponding to the adjustment item with 10-key.
2) Press [START] key.
3) Enter the adjustment value with 10-key.
4) Press [START] key.

   (The set value is stored, and the output corresponding to the set value is outputted for 30sec.)

Press [CUSTOM SETTINGS] key to stop the operation.

(The developing bias output voltage adjustment and output check can be made in each print mode.)

Item			Set range	Default
1	AUTO	Auto mode	0 - 750	495
2	CHARACTER	Text mode		
3	MIX	Text/Photo mode		
4	PHOTO	Photo mode		
5	PRINTER	Printer mode		
6	FAX	FAX mode		
7	PLUS	Reverse developing bias voltage	0 - 250	150



```
SIMULATION 8-1
DV BIAS SETTING. SELECT 1-7, AND PRESS START.
1.AUTO 495   2.CHARACTER 495
3.MIX 495    4.PHOTO 495                    1
5.PRINTER 495   6.FAX 495   7.PLUS 150
```

Press [START] key. / Press [CUSTOM SETTINGS] key.

```
SIMULATION 8-1
DV BIAS SETTING. INPUT VALUE, AND PRESS START.
1:AUTO (0-750)
                                          495
```

Press [START] key. / Press [CUSTOM SETTINGS] key. Or after 30sec output.

```
SIMULATION 8-1
DV BIAS SETTING. EXECUTING···.
1:AUTO
                                          495
```

8-2

Purpose	Adjustment/Operation test/Check
Function (Purpose)	Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)

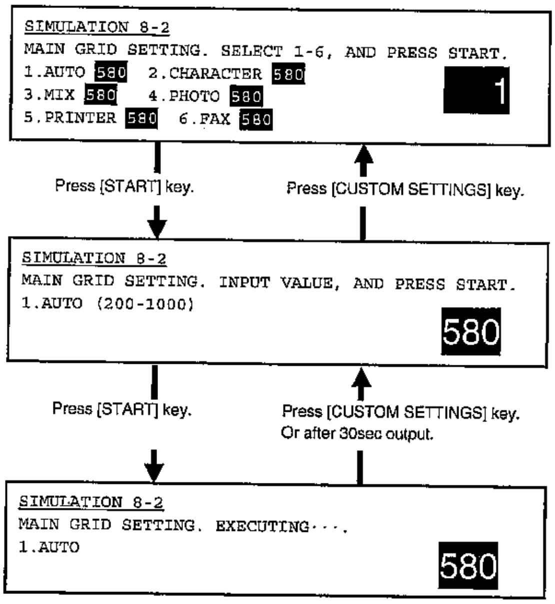
Operation/Procedure

1) Enter the number corresponding to the adjustment item with 10-key.
2) Press [START] key.
3) Enter the adjustment value with 10-key.
4) Press [START] key.
   (The set value is stored, and the output corresponding to the set value is outputted for 30sec.)

Press [CUSTOM SETTINGS] key to stop the operation.

(The main charger grid output voltage adjustment and output check can be made in each print mode.)

Item			Set range	Default
1	AUTO	Auto mode	200 - 1000	580
2	CHARACTER	Text mode		
3	MIX	Text/Photo mode		
4	PHOTO	Photo mode		
5	PRINTER	Printer mode		
6	FAX	FAX mode		



```
SIMULATION 8-2
MAIN GRID SETTING. SELECT 1-6, AND PRESS START.
1.AUTO 580   2.CHARACTER 580
3.MIX 580    4.PHOTO 580                    1
5.PRINTER 580   6.FAX 580
```

Press [START] key. / Press [CUSTOM SETTINGS] key.

```
SIMULATION 8-2
MAIN GRID SETTING. INPUT VALUE, AND PRESS START.
1.AUTO (200-1000)
                                          580
```

Press [START] key. / Press [CUSTOM SETTINGS] key. Or after 30sec output.

```
SIMULATION 8-2
MAIN GRID SETTING. EXECUTING···.
1.AUTO
                                          580
```

8-6

Purpose	Adjustment/Operation test/Check
Function (Purpose)	Used to check and adjust the operation of the transfer voltage and the control circuit.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)/Transfer

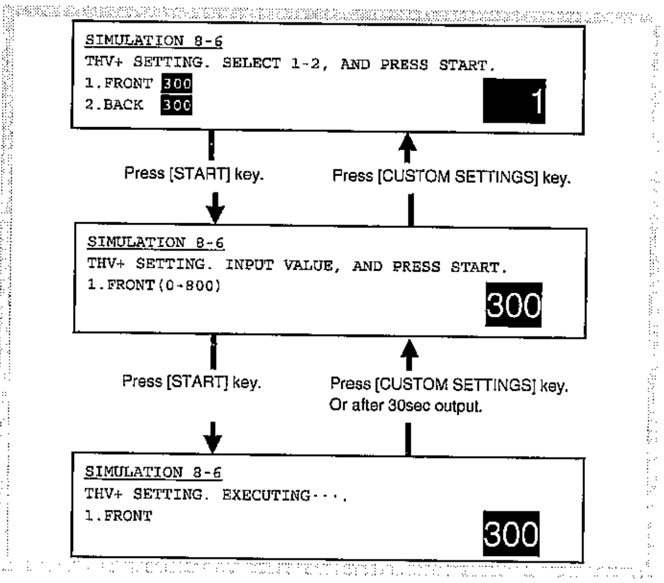
Operation/Procedure

1) Enter the number corresponding to the adjustment item with 10-key.
2) Press [START] key.
3) Enter the adjustment value with 10-key.
4) Press [START] key.
   (The set value is stored, and the voltage corresponding to the set value is outputted for 30sec.)

Press [CUSTOM SETTINGS] key to stop the operation.

(The transfer output voltage adjustment and output check can be made in each print mode.)

Item			Set range	Default	
				AR-M550N/U, AR-620N/U	AR-M700N/U
1	FRONT	Long side print mode	0 - 800	300	400
2	BACK	Back side print mode		300	400



```
SIMULATION 8-6
THV+ SETTING. SELECT 1-2, AND PRESS START.
1.FRONT 300
2.BACK 300                                  1
```

Press [START] key. / Press [CUSTOM SETTINGS] key.

```
SIMULATION 8-6
THV+ SETTING. INPUT VALUE, AND PRESS START.
1.FRONT(0-800)
                                          300
```

Press [START] key. / Press [CUSTOM SETTINGS] key. Or after 30sec output.

```
SIMULATION 8-6
THV+ SETTING. EXECUTING···.
1.FRONT
                                          300
```

8-17

Purpose	Operation test/Check
Function (Purpose)	Used to check and adjust the operation of the transfer voltage and the related circuit. (Transfer belt cleaning mode)
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)
Item	Operation

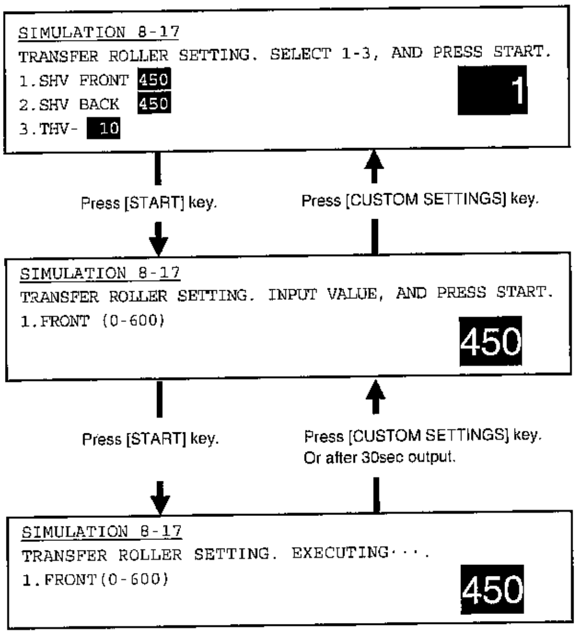
Operation/Procedure

1) Enter the number corresponding to the adjustment item with 10-key.
2) Press [START] key.
3) Enter the adjustment value with 10-key.
4) Press [START] key.
   (The set value is stored, and the voltage corresponding to the set value is outputted for 30sec.)

Press [CUSTOM SETTINGS] key to stop the operation.

(The transfer output voltage adjustment and output check can be made in the transfer belt cleaning mode.)

	Item		Set range	Default
1	SHF FRONT	AC component	0 - 450	450
2	SHV BACK	AC component	0 - 450	450
3	THV-	DC component	0 - 150	10



```
SIMULATION 8-17
TRANSFER ROLLER SETTING. SELECT 1-3, AND PRESS START.
1.SHV FRONT 450
2.SHV BACK  450
3.THV-      10                                    1
```

```
SIMULATION 8-17
TRANSFER ROLLER SETTING. INPUT VALUE, AND PRESS START.
1.FRONT (0-600)
                                                  450
```

```
SIMULATION 8-17
TRANSFER ROLLER SETTING. EXECUTING···.
1.FRONT(0-600)
                                                  450
```

8-18

Purpose	Adjustment/Operation test/Check
Function (Purpose)	Used to check and adjust the voltage of the transfer CL roller cleaning/transfer CL roller print mode and the control circuit.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)

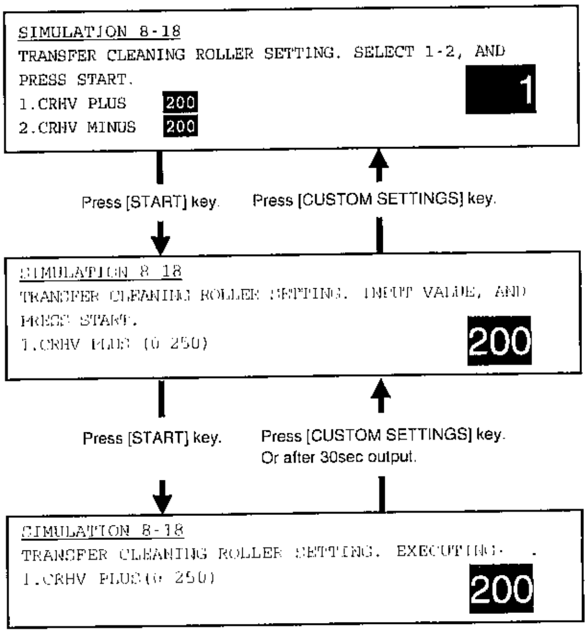
Operation/Procedure

1) Select the number corresponding to the adjustment item with 10-key.
2) Press [START] key.
3) Enter the adjustment value with 10-key.
4) Press [START] key.
   (The set value is saved in the memory and the voltage corresponding to the set value is outputted for 30sec.)

Press [CUSTOM SETTINGS] key to stop the operation.

(The output voltage of the transfer CL roller cleaning/transfer CL roller print mode can be adjusted and checked.)

Item		Set range	Default
Transfer CL roller (Print)	CRHV PLUS	0 - 250	200
Transfer CL roller (Cleaning)	CRHV MINUS	0 - 250	200



```
SIMULATION 8-18
TRANSFER CLEANING ROLLER SETTING. SELECT 1-2, AND
PRESS START.
1.CRHV PLUS  200                                  1
2.CRHV MINUS 200
```

```
SIMULATION 8-18
TRANSFER CLEANING ROLLER SETTING. INPUT VALUE, AND
PRESS START.
1.CRHV PLUS (0-250)                               200
```

```
SIMULATION 8-18
TRANSFER CLEANING ROLLER SETTING. EXECUTING·  .
1.CRHV PLUS(0-250)                                200
```

8-19

Purpose	Adjustment/Operation test/Check
Function (Purpose)	Used to check and adjust the fusing bias voltage and the control circuit. (Not used)
Section	Fusing

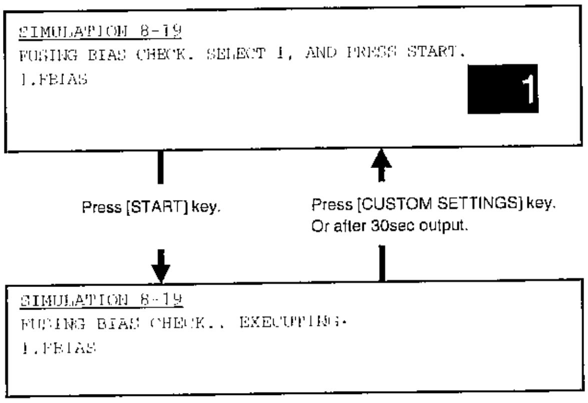
Operation/Procedure (Not used)

1) Select the number corresponding to the adjustment item with 10-key.
2) Press [START] key.
   (The voltage is outputted for 30sec.)

When [CUSTOM SETTINGS] key is pressed, the operation can be stopped.

The output voltage can be adjusted with the adjustment volumes VR101/VR102 on the high voltage PWB (fusing bias).

Item		Adjustment VR
Fusing bias (-)	FBIAS	VR 101
Fusing bias (+)		VR 102



```
SIMULATION 8-19
FUSING BIAS CHECK. SELECT 1, AND PRESS START.
1.FBIAS                                           1
```

```
SIMULATION 8-19
FUSING BIAS CHECK.. EXECUTING·
1.FBIAS
```

9

9-1

Purpose	Operation test/Check
Function (Purpose)	Used to check and adjust the operation of the load (clutch/solenoid) in the duplex section and the control circuit.
Section	Duplex
Item	Operation

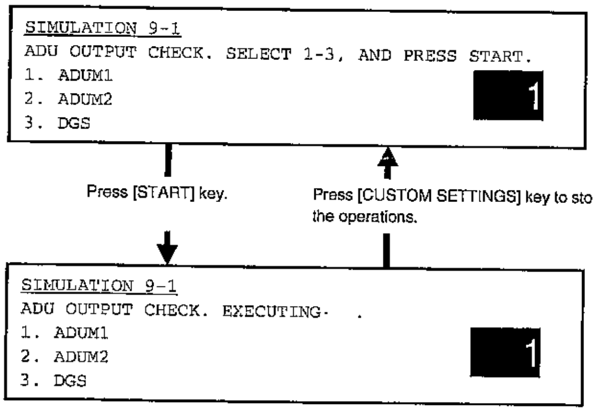
Operation/Procedure

1) Select the number corresponding to the target of the operation check with 10-key.
2) Press [START] key.

   The load selected in procedure 1) is operated.

Press [CUSTOM SETTINGS] key to stop the operation.

1	ADUM1	ADU motor 1: Upstream
2	ADUM2	ADU motor 2: Downstream
3	DGS	ADU gate solenoid



```
SIMULATION 9-1
ADU OUTPUT CHECK. SELECT 1-3, AND PRESS START.
1. ADUM1
2. ADUM2                                        1
3. DGS
```

Press [START] key.

Press [CUSTOM SETTINGS] key to stop the operations.

```
SIMULATION 9-1
ADU OUTPUT CHECK. EXECUTING·  .
1. ADUM1
2. ADUM2                                        1
3. DGS
```

9-2

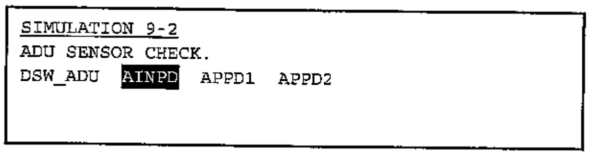
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the sensors and detectors in the duplex section and its control circuit.
Section	Duplex
Item	Operation

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The active sensors and detectors are highlighted.

DSW_ADU	ADU cabinet open/close detection
AINPD	ADU paper entry detection
APPD1	ADU transport detection 1
APPD2	ADU transport detection 2



```
SIMULATION 9-2
ADU SENSOR CHECK.
DSW_ADU  AINPD  APPD1  APPD2
```

10

10-1

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the toner motor and the related circuit.
Section	Process (Developing)
Item	Operation

Operation/Procedure

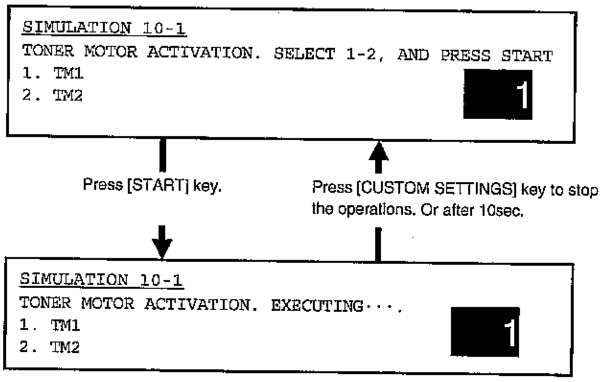
1) Select the number corresponding to the target of the operation check with 10-key.
2) Press [START] key.

   The load selected in procedure 1) is operated for 10sec.

Press [CUSTOM SETTINGS] key to stop the operation.

NOTE: Do not execute this simulation with toner in the toner bottle and the intermediate toner tank. Excessive toner may enter the developing section, causing overtoner. Check that there is no toner in the toner bottle and the intermediate toner tank or disassemble the toner motor before executing this simulation.

TM1	Toner motor 1
TM2	Toner motor 2



```
SIMULATION 10-1
TONER MOTOR ACTIVATION. SELECT 1-2, AND PRESS START
1. TM1
2. TM2                                               1
```

Press [START] key.

Press [CUSTOM SETTINGS] key to stop the operations. Or after 10sec.

```
SIMULATION 10-1
TONER MOTOR ACTIVATION. EXECUTING···.
1. TM1
2. TM2                                               1
```

10-2

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the toner remaining quantity sensor and the related circuit.
Section	Process (Developing)
Item	Operation

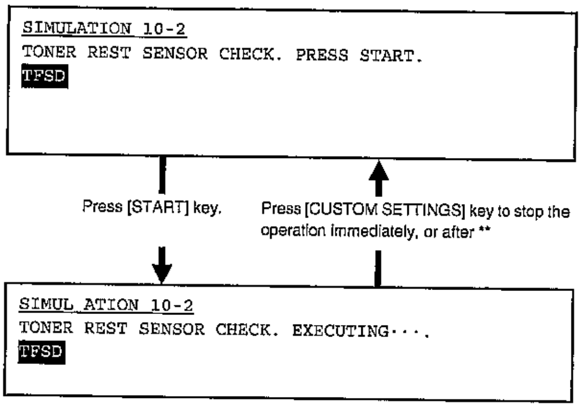
Operation/Procedure

1) Press [START] key.

   The toner motor rotates 2 turns, and the toner presence/empty in the toner hopper is displayed.

   Toner empty: Normal display

   Toner remained: Highlighted display



```
SIMULATION 10-2
TONER REST SENSOR CHECK. PRESS START.
TFSD
```

Press [START] key.

Press [CUSTOM SETTINGS] key to stop the operation immediately, or after **

```
SIMUL ATION 10-2
TONER REST SENSOR CHECK. EXECUTING···.
TFSD
```

13

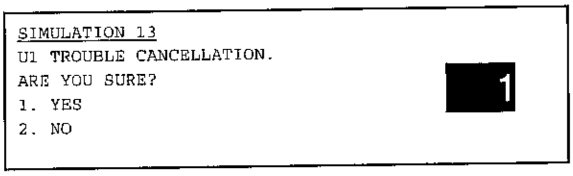
13-0

Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag "U1" trouble. (Only when FAX is installed.)
Section	FAX
Item	Trouble

Operation/Procedure

1) Select 1 (YES) with 10-key.
2) Press [START] key. (The trouble display is canceled.)

1	YES	After canceling U1 trouble, the machine returns to the main code entry standby mode.
2	NO	Without canceling U1 trouble, the machine returns to the main code entry standby mode.



```
SIMULATION 13
U1 TROUBLE CANCELLATION.
ARE YOU SURE?                    1
1. YES
2. NO
```

14

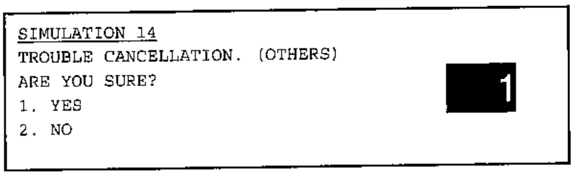
14-0

Purpose	Clear/Cancel (Trouble etc.)
⚠ **Function (Purpose)**	Used to cancel excluding the self-diag U1/LCC/U2/PF troubles.
Item	Trouble Error

Operation/Procedure

1) Select 1 (YES) with 10-key.
2) Press [START] key. (The trouble display is canceled.)

1	YES	After canceling the trouble other than U1, U2, PF, and LCC, the machine returns to the main code entry standby mode.
2	NO	Without canceling the trouble, the machine returns to the main code entry standby mode.



```
SIMULATION 14
TROUBLE CANCELLATION. (OTHERS)
ARE YOU SURE?                    1
1. YES
2. NO
```

15

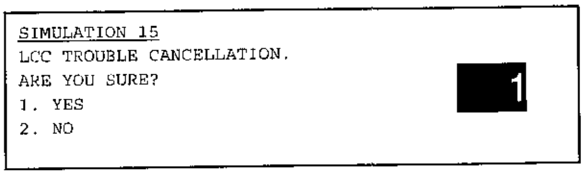
15-0

Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag "U6-09, F3-12, 22" (large capacity paper feed tray, paper feed trays 1, 2) troubles.
Section	LCC
Item	Trouble

Operation/Procedure

1) Select 1 (YES) with 10-key.
2) Press [START] key. (The trouble display is canceled.)

1	YES	After canceling the LCC trouble, the machine returns to the main code entry standby mode.
2	NO	Without canceling the trouble, the machine returns to the main code entry standby mode.



```
SIMULATION 15
LCC TROUBLE CANCELLATION.
ARE YOU SURE?                    1
1. YES
2. NO
```

16

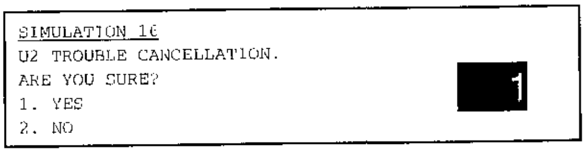
16-0

Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag U2 troubles.
Section	MFP control PWB, PCU PWB, scanner control PWB
Item	Trouble

Operation/Procedure

1) Select 1 (YES) with 10-key.
2) Press [START] key. (The trouble display is canceled.)

1	YES	After canceling the U2 trouble, the machine returns to the main code entry standby mode.
2	NO	Without canceling the trouble, the machine returns to the main code entry standby mode.



```
SIMULATION 16
U2 TROUBLE CANCELLATION.
ARE YOU SURE?                    1
1. YES
2. NO
```

17

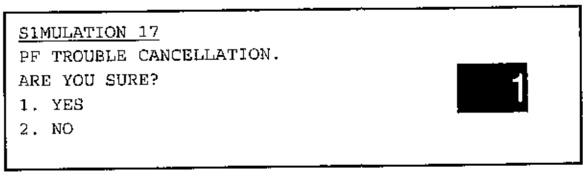
17-0

Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the PF troubles (when the copy inhibit command from the host computer is received).
Section	Communication unit (TEL/LIU/MODEM etc.)
Item	Trouble Error

Operation/Procedure

1) Select 1 (YES) with 10-key.
2) Press [START] key. (The trouble display is canceled.)

1	YES	After canceling the PF trouble, the machine returns to the main code entry standby mode.
2	NO	Without canceling the trouble, the machine returns to the main code entry standby mode.



```
SIMULATION 17
PF TROUBLE CANCELLATION.
ARE YOU SURE?                    1
1. YES
2. NO
```

21

21-1

Purpose	Setting
Function (Purpose)	Used to set the maintenance cycle.
Item	Specifications Counter

Operation/Procedure

1) Enter the number corresponding to the maintenance timing display.
2) Press [START] key. The condition entered in procedure 1) is set.

Maintenance timing display		Set range
0	Default (Differs depending on the model.)	0 - 999
1 - 300	Maintenance display at 1K - 300K	
999	No maintenance display	

```
SIMULATION 21-1
MAINTENANCE CYCLE SETUP. INPUT VALUE 0-999, AND PRESS
START.
 0:      DEFAULT
 1-300: MAINTENANCE CYCLE (1K-300K)
 999:    FREE                                        0
```

22

22-1

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the print count value in each section and each operation mode. (Used to check the maintenance timing.)
Section	
Item	Counter

Operation/Procedure

Various print counter values are displayed.

TOTAL	Total counter
DRUM	Drum counter
TONER	Toner counter
DEVE	Developer counter
MAINTENANCE	Maintenance counter
TOTAL OUTPUT	Total output quantity
COPIES	Copy effective paper counter
PRINTER	Printer counter
FAX	FAX print counter
I-FAX OUTPUT	iFAX print counter
DOC FILING OUTPUT	Document filing print counter
RIIGHT SIDE OUTPUT	Right paper exit counter
OTHERS	Other print counter (List print , etc.)

```
SIMULATION 22-1
COUNTER DATA DISPLAY.
TOTAL: ********  DRUM: ********  TONER: ********
DEVE: ********   MAINTENANCE: ********
TOTAL OUTPUT: ******** COPIES: ********
PRINTER: ********      FAX OUTPUT: ********
I-FAX OUTPUT:********  DOC FILING OUTPUT:********
RIGHT SIDE:********    OTHERS: ********
```

22-2

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the total numbers of misfeed and troubles. (When the number of misfeed is considerably great, it is judged as necessary for repair. The misfeed rate is obtained by dividing this count value with the total counter value.)
Item	Trouble

Operation/Procedure

The paper jam/trouble counter value is displayed.

PAPER JAM	Number of paper jams
SPF JAM	Number of SPF jams
TROUBLE	Number of troubles

```
SIMULATION 22-2
JAM/TROUBLE COUNTER DATA DISPLAY.
PAPER JAM: ********    SPF JAM: ********
TROUBLE: ********
```

22-3

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check misfeed positions and the misfeed count of each position. (If the misfeed count is considerably great, it may be judged as necessary to repair.)
Section	Sections other than SPF/DSPF section
Item	Trouble Misfeed

Operation/Procedure

The history of paper jams and misfeed is displayed.

The misfeed history is displayed sequentially from the latest one. The max. 100 items of misfeed history can be recorded. The data may be used to identify trouble position.

The latest 100 items of paper jam history are displayed. (Refer to the jam cause code table below.)

(Jam cause code)

Code	Description
NO_JAM_CAUSE	No jam. Also used to cancel a jam.
▲ TRAY1	Tray 1 paper feed jam (PFD2 not-reached)
PFD2_NM1	PFD2 not-reached jam (Tray 3 feed paper)
PFD2_NM2	PFD2 not-reached jam (Tray 4 feed paper)
PFD2_NAD	PFD2 not-reached jam (ADU re-feed paper)
▲ PFD2_ST1	PFD2 remaining jam (Tray 1 feed paper)
PFD2_SM1	PFD2 remaining jam (Tray 3 feed paper)
PFD2_SM2	PFD2 remaining jam (Tray 4 feed paper)
PFD2_SAD	PFD2 remaining jam (ADU re-feed paper)
PPD_NMF	PPD1 not-reached jam (Manual feed tray feed paper)
▲ PPD_NT1	PPD1 not-reached jam (Tray 1 feed paper)
PPD_NT2	PPD1 not-reached jam (Tray 2 feed paper)
PPD_NM1	PPD1 not-reached jam (Tray 3 feed paper)
PPD_NM2	PPD1 not-reached jam (Tray 4 feed paper)
PPD_NLC	PPD1 not-reached jam (LCC paper feed paper)
PPD_NAD	PPD1 not-reached jam (ADU re-feed paper)
PPD_SMF	PPD1 remaining jam (Manual feed tray feed paper)
▲ PPD_ST1	PPD1 remaining jam (Tray 1 feed paper)
PPD_ST2	PPD1 remaining jam (Tray 2 feed paper)
PPD_SM1	PPD1 remaining jam (Tray 3 feed paper)

⚠: Feb. 9 2004

Code	Description
⚠ PPD_SM2	PPD1 remaining jam (Tray 4 feed paper)
PPD_SLC	PPD1 remaining jam (LCC paper feed paper)
PPD_SAD	PPD1 remaining jam (ADU re-feed paper)
PPD_PRI	PPD1 jam (Image ready request is not sent from ICU.)
PSD_N	PSD not-reached jam (currently not detected)
PSD_S	PSD remaining jam (currently not detected)
POD1_N	POD1 not-reached jam
POD1_S	POD1 remaining jam
POD1_LDV	POD1 jam (LCV is turned OFF.)
POD2_N	POD2 not-reached jam
POD2_SR	POD2 remaining jam (When paper is discharged on the right side of the machine.)
POD2_SL	POD2 remaining jam (When paper is discharged on the left side of the machine.)
AINPD_N	ADU paper entry sensor not-reached jam
AINPD_S	ADU paper entry sensor remaining jam
APPD1_N	ADU transport sensor 1 not-reached jam
APPD1_S	ADU transport sensor 1 remaining jam
APPD2_N	ADU transport sensor 2 not-reached jam
APPD2_S	ADU transport sensor 2 remaining jam
⚠ DESK1	Tray 3 paper feed jam (M1PFD not-reached)
M1PFD_N2	M1PFD not-reached jam (Tray 4 feed paper)
M1PFD_S1	M1PFD remaining jam (Tray 3 feed paper)
M1PFD_S2	M1PFD remaining jam (Tray 4 feed paper)
DESK2	Tray 4 paper feed jam (M2PFD not-reached)
M2PFD_S	M2PFD remaining jam
⚠ MPRD2_N2	MPRD2 not-reached jam (Tray 2 feed paper)
MPRD2_NM	MPRD2 not reached jam (Manual paper feed tray feed paper)
MPRD2_NL	MPRD2 not-reached jam (LCC paper feed paper)
⚠ MPRD2_S2	MPRD2 remaining jam (Tray 2 feed paper)
MPRD2_SM	MPRD2 remaining jam (Manual paper feed tray feed paper)
MPRD2_SL	MPRD2 remaining jam (LCC paper feed paper)
⚠ TRAY2	Tray 2 paper feed jam (MPRD1 not-reached)
MPRD1_NM	MPRD1 not-reached jam (Manual paper feed tray feed paper)
MPRD1_NL	MPRD1 not-reached jam (LCC paper feed paper)
⚠ MPRD1_S2	MPRD1 remaining jam (Tray 2 feed paper)
MPRD1_SM	MPRD1 remaining jam (Manual paper feed tray feed paper)
MPRD1_SL	MPRD1 remaining jam (LCC paper feed paper)
MPFD2_NM	MPFD2 not-reached jam (Manual paper feed tray feed paper)
MPFD2_NL	MPFD2 not-reached jam (LCC paper feed paper)
MPFD2_SM	MPFD2 remaining jam (Manual paper feed tray feed paper)
MPFD2_SL	MPFD2 remaining jam (LCC paper feed paper)
BPT	Manual paper feed tray paper feed jam (MPFD1 not-reached)
MPFD1_S	MPFD1 remaining jam
LPPD_N	LPPD not-reached jam
LPPD_S	LPPD remaining jam
LPPD_LCC	LPPD jam (No reply in a certain time after preliminary paper feed from LCC and issuing the paper feed command.)

Code	Description
LCC	LCC paper feed jam (LTD not-reached jam)
LTD_S	LTD remaining jam
FES_N	FINISHER Inlet port sensor not-reached jam
FES_S	FINISHER Inlet port sensor remaining jam
FFPS_N	FINISHER Saddle not-reached jam
FFPS_S	FINISHER Saddle remaining jam
FEXIT_S	FINISHER Bundle exit remaining jam
FSTPL	FINISHER Staple jam
FPNCH	FINISHER Punch jam
FDOP	FINISHER Door open jam
FIN_TIME	FINISHER Abnormal paper interval jam
REG_SEN_N	INSERTER Resist sensor not-reached jam (When inserter paper feed)
REG_SEN_S	INSERTER Resist sensor remaining jam (When inserter paper feed)
TIM_SEN_N	INSERTER Timing sensor not-reached jam (When inserter paper feed)
TIM_SEN_S	INSERTER Timing sensor remaining jam (When inserter paper feed)
HI_SEN_NI	INSERTER Paper exit sensor not-reached jam (When inserter paper feed)
HI_SEN_NP	INSERTER Paper exit sensor not-reached jam (Main unit paper feed)
HI_SEN_S	INSERTER Paper exit sensor remaining jam
H_SEN_NF	INSERTER Reverse sensor not-reached jam (When entering into the reverse path.)
H_SEN_NB	INSERTER Reverse sensor not-reached jam When discharging to the reverse path.)
H_SEN_SF	INSERTER Reverse sensor remaining jam (When entering into the reverse path.)
H_SEN_SB	INSERTER Reverse sensor remaining jam (When discharging to the reverse path.)

```
SIMULATION 22-3
PAPER JAM HISTORY.
*******,*******,*******,*******,*******,*******,*******,*******,*******,*******
*******,*******,*******,*******,*******,*******,*******,*******,*******,*******
*******,*******,*******,*******,*******,*******,*******,*******,*******,*******
*******,*******,*******,*******,*******,*******,*******,*******,*******,*******
*******,*******,*******,*******,*******,*******,*******,*******,*******,*******
................
```

(10 lines, 80 digits = 800 characters)

22-4

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the trouble (self diag) history.
Section	
Item	Trouble

Operation/Procedure

The trouble history is displayed.

The trouble history is displayed sequentially from the latest one. The max. 100 items can be stored. (The oldest one is deleted sequentially. The trouble position can be identified by the data.)

```
SIMULATION 22-4
TROUBLE HISTORY.
**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**
**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**
**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**
**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**
**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**,**-**
................
```

(10 lines, 80 digits = 800 characters)

22-5

Purpose	Other
Function (Purpose)	Used to check the ROM version of each unit (section).
Section	
Item	Software

Operation/Procedure

1)The ROM version of each section can be checked. When there is any problem in the software, use this simulation to check the ROM version of each section and revise the version if necessary.

S/N	Engine section serial number
MFP	MFP controller
(LANGUAGE)	(Language version)
BOOT	MFP controller BOOT ROM
FAX	FAX controller
PCU	PCU controller
SCANNER	Scanner controller
FINISHER	Finisher controller
SADDLE UNIT	Saddle unit
LCC	Side LCC
INSERTER	Inserter

```
SIMULATION 22-5
ROM VERSION DATA DISPLAY.
S/N:    0000000000
MFP:            1.00   (LANGUAGE:  1.00)
PCU:            1.00         BOOT:       1.00
SCANNER:        1.00          FAX:       1.00
FINISHER:       1.00
SADDLE UNIT:    1.00          LCC:       1.00
INSERTER:       1.00
```

22-6

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to output the list of the setting and adjustment data (simulations, FAX soft switch, counters).
Section	
Item	Data Adjust/Setting data

Operation/Procedure

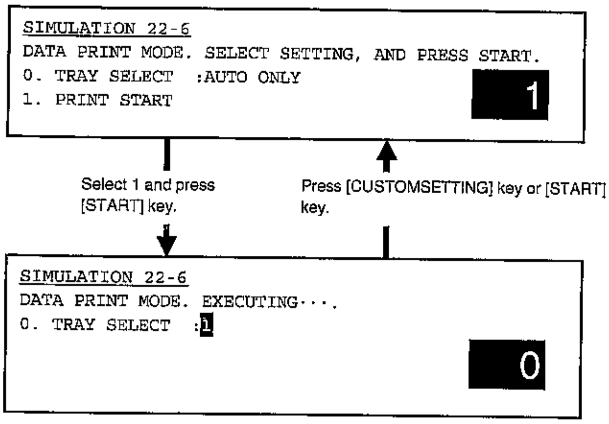
When installing or servicing this machine, execute this simulation to print and save various setting and adjustment data for next servicing. (For example, memory trouble, PWB replacement, etc.)

1) Enter 1 with 10-key.

2) Press [START] key.

The various setting and adjustment data are printed out. (The print paper cannot be selected optionally.)

0	TRAY SELECT	TRAY SELECT auto only (Selection is not allowed.)
1	PRINT START	PRINT START



```
SIMULATION 22-6
DATA PRINT MODE. SELECT SETTING, AND PRESS START.
0. TRAY SELECT   :AUTO ONLY
1. PRINT START                                      1
```

Select 1 and press [START] key.

Press [CUSTOMSETTING] key or [START] key.

```
SIMULATION 22-6
DATA PRINT MODE. EXECUTING···.
0. TRAY SELECT   :1

                                                    0
```

22-7

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to display the key operator code. (This simulation is used when the customer forgets the key operator code.)
Section	
Item	Data User data

Operation/Procedure

The key operator code is displayed.

```
SIMULATION 22-7
KEY OPERATOR CODE DISPLAY.
CODE: *****
```

22-8

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the number of use of the finisher, the SPF, and the scan (reading) unit.
Section	Optical (Image scanning) Finisher
Item	Counter

Operation/Procedure

The values of the finisher counter, the scanner (read), counter, and the SPF related counters are displayed.

SPF	Document feed quantity
SCAN	Number of scans
STAPLER	Number of stapling
PUNCH	Number of punching
STAMP	Number of SPF finish stamps
SADDLE STAPLER	Number of saddle staples
INSERTER	Number of inserter operations

```
SIMULATION 22-8
ORG./STAPLE COUNTER DATA DISPLAY.
SPF: ********
SCAN: ********
STAPLER: ********        PUNCH: ********
STAMP: ********          SADDLE STAPLER: ********
INSERTER: ********       INSERTER OFF LINE: ********
```

22-9

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the number of use (print quantity) of each paper feed section.
Section	Paper feed, ADU
Item	Counter

Operation/Procedure

The values of the paper feed related counters are displayed.

TRAY1	Tray 1 use quantity
TRAY2	Tray 2 use quantity
TRAY3	Tray 3 use quantity
TRAY4	Tray 4 use quantity
BPT	Manual feed tray use quantity
ADU	Duplex paper feed quantity
LCC	Side LCC use quantity

```
SIMULATION 22-9
PAPER FEED COUNTER DATA DISPLAY.
TRAY1: ********   TRAY2:********
TRAY3: ********   TRAY4:********
BPT: ********    ADU: ********
LCC: ********
```

⚠ : Feb. 9 2004

22-10

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the system configuration (option, internal hardware).
Section	
Item	Specifications Options

Operation/Procedure

The system configuration is displayed. (The model names of the installed devices and options are displayed.)

MACHINE	(Model code)
FINISHER	NONE/ (Model code)
LCC	NONE/ (Model code)
INSERTER	NONE/ (Model code)
PUNCH	NONE/ (Model code)
SYSTEM MEMORY	Memory capacity (MB)
HDD	Hard disk capacity (MB)
NIC	NONE/ NIC
NSCN	NONE/ (Network scanner)
PS3	NONE/ (PS 3 expansion kit)
FAX	NONE/ (Model code)
FAX MEMORY	FAX expansion memory capacity (MB)
STAMP	Finish stamp NONE/ (Model code)
PCU TYPE	PCU PWB type (JPN: Japan, EX: EX Japan)

(Model code list)

Item	Display	Content
MACHINE	AR-555S/ M550U	Copier model (55-sheet model)
	AR-625S/ M620U	Copier model (62-sheet model)
	AR-705S/ M700U	Copier model (70-sheet model)
	AR-555M/ M550N	Network print standard provision model (55-sheet model)
	AR-625M/ M620N	Network print standard provision model (62-sheet model)
	AR-705M/ M700N	Network print standard provision model (70-sheet model)
INSERTER	-----	Inserter not installed
	AR-CF2	Inserter installed
FINISHER	-----	After-process unit not installed
	AR-F15	Finisher installed
	AR-F16	Saddle finisher installed
PUNCH	-----	Punch unit not installed
	AR-PN4A	Punch unit installed (2-hole)
	AR-PN4B	Punch unit installed (2-hole/3-hole auto select)
	AR-PN4C	Punch unit installed (4-hole)
	AR-PN4D	Punch unit installed (4-hole, wide)
LCC	-----	Side LCC not installed
	AR-LC6	Side LCC installed
MEMORY	0MB	Expansion memory not installed
	***MB	Expansion memory ***MB
HD	0MB	Hard disk not installed
	****MB	Hard disk installed ()
NIC	-----	Network card not installed
	NIC	Network card installed
PS EXPANSION KIT	-----	PS expansion kit not installed
	AR-PK5	PS expansion kit installed
FAX	-----	FAX expansion kit not installed
	AR-FX8	FAX expansion installed
NETWORKS CANNER	-----	Network expansion kit not installed
	AR-NS3	Network expansion kit installed
EXPANSION MEMORY	-----	FAX expansion memory not installed
	AR-MM9	FAX expansion memory installed
FINISH STAMP	-----	Finish stamp unit not installed
	AR-SU1	Finish stamp unit installed

```
SIMULATION 22-10
SYSTEM INFORMATION.
MACHINE:*******
FINISHER: *******  PUNCH: ******
LCC: ******* INSERTER: ********
SYSTEM MEMORY: **MB  HDD: ***MB
NIC: *******     NSCN: ******  PS3: ******
FAX: *******  FAX MEMORY: **MB
STAMP: *******
PCU TYPE: *******
```

22-11

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the use frequency (send/receive) of FAX. (Only when FAX is installed)
Section	FAX
Item	Data

Operation/Procedure

The values of the FAX send counter and the FAX receive counter are displayed.

FAX SEND	Number of FAX send
FAX RECEIVE	Number of FAX receive
FAX OUTPUT	Number of FAX print
SEND IMAGES	Send quantity
SEND TIME	Send time
RECEIVE TIME	Receive time

```
SIMULATION 22-11
FAX COUNTER DATA DISPLAY.
FAX SEND: ********    FAX RECEIVE : ********
FAX OUTPUT:********
SEND IMAGES: ********    SEND TIME: ********:**:**
RECEIVE TIME: ********:**:**
```

22-12

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the SPF misfeed positions and the number of misfeed at each position. (When the number of misfeed is considerably great, it can be judged as necessary for repair.)
Section	DSPF
Item	Trouble

Operation/Procedure

The history of paper jam and misfeed is displayed.

The misfeed history is displayed sequentially from the latest one. The max. 20 items are recorded. (The oldest one is sequentially deleted.) This data can be used to identify the trouble position.

The latest 20 data of document jam history are displayed. (Refer to the jam code below.)

(Jam cause code)

Code	Description
NO_JAM_CAUSE	No jam. Also used to cancel a jam.
SPPD1_N	SPPD1 not-reached jam
SPPD1_S	SPPD1 remaining jam
SPPD2_N	SPPD2 not-reached jam
SPPD2_S	SPPD2 remaining jam
SPPD3_N	SPPD3 not-reached jam

Code	Description
SPPD3_S	SPPD3 remaining jam
SPPD4_N	SPPD4 not-reached jam
SPPD4_S	SPPD4 remaining jam
SPOD_N	SPOD not-reached jam
SPOD_S	SPOD remaining jam
SPSD_SCN	Exposure start notification timer end

```
SIMULATION 22-12
SPF JAM HISTORY.
*******,*******,*******,*******,*******,*******,*******,*******,*******,*******
*******,*******,*******,*******,*******,*******,*******,*******,*******,*******
```

(10 lines, 80 digits = 800 characters)

22-13

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the operating time of the process section (OPC drum, DV unit, toner bottle).
Section	
Item	Counter

Operation/Procedure

The rotating time and the print quantity of the process section (OPC drum, DV unit (developer), toner motor (toner bottle)) are displayed.

DRUM	OPC drum	Count value (counts)
		Rotating time (sec)
TONER	Toner motor	Count value (counts)
		Rotating time (sec)
DEVE	DV unit	Count value (counts)
		Rotating time (sec)

▲

```
SIMULATION 22-13
PROCESS DATA DISPLAY.
DRUM: ********(counts)    **********(sec.)
TONER: ********(counts)   **********(sec.)
DEVE: *********(counts)   **********(sec.)
```

22-19

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the values of the counters related to the scan mode and the internet FAX mode.
Section	Scanner
Item	Counter

Operation/Procedure

The values of the counters related to the scan mode and the internet FAX mode are displayed.

NETWORK SCANNER ORIGINAL COUNTER	Document scan quantity (OC, SPF total quantity)
MAIL COUNTER	Number of times of mail send
FTP COUNTER	Number of times of FTP send
INTERNET-FAX ORIGINAL COUNTER	Document scan quantity (OC, SPF, total quantity)
INTERNET-FAX SEND	Number of times of internet FAX send
INTERNET-FAX RECEIVE	Number of times of internet FAX receive
INTERNET-FAX OUTPUT	Internet FAX print quantity
SCAN TO HDD	Scan to HDD record quantity
INTERNET-FAX SEND IMAGES	IFAX send quantity counter
MAIL SEND IMAGES	MAIL send quantity counter
FTP SEND IMAGES	FTP send quantity counter

```
SIMULATION 22-19
NETWORK SCANNER AND INTERNET-FAX COUNTER DISPLAY.

 NETWORK SCANNER ORIGINAL COUNTER: *********
 MAIL COUNTER: ********
 FTP COUNTER: ********
 INTERNET-FAX ORIGINAL COUNTER: ********
 INTERNET-FAX SEND: ********
 INTERNET-FAX RECEIVE: ********
 INTERNET-FAX OUTPUT: ********
 SCAN TO HDD : ********
 INTERNET-FAX SEND IMAGES: ********
 MAIL SEND IMAGES: ********
 FTP SEND IMAGES: ********
```

23

23-2

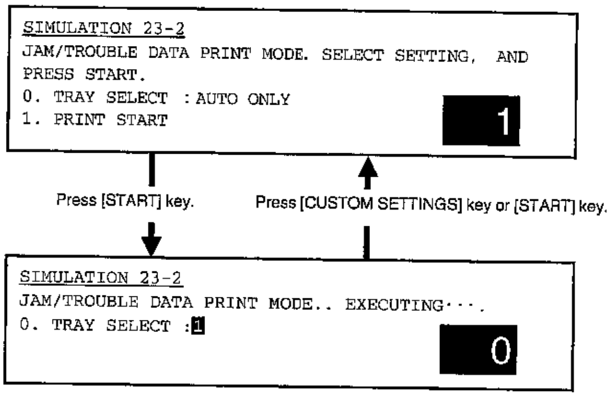
Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the trouble history of paper jam and misfeed. (If the number of misfeed and troubles is considerably great, it may be judged as necessary to repair.)
Item	Trouble

Operation/Procedure

1) Select "1. PRINT START."
2) Press [START] key.

The trouble history of paper jam and misfeed is printed.

This data can be cleared by SIM 24-1.



```
SIMULATION 23-2
JAM/TROUBLE DATA PRINT MODE. SELECT SETTING,  AND
PRESS START.
0. TRAY SELECT  : AUTO ONLY
1. PRINT START
```

```
SIMULATION 23-2
JAM/TROUBLE DATA PRINT MODE.. EXECUTING···.
0. TRAY SELECT :1
```

23-80

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the sensors and detectors in the paper feed and transport section.
Section	Paper feed, paper transport
Item	Operation

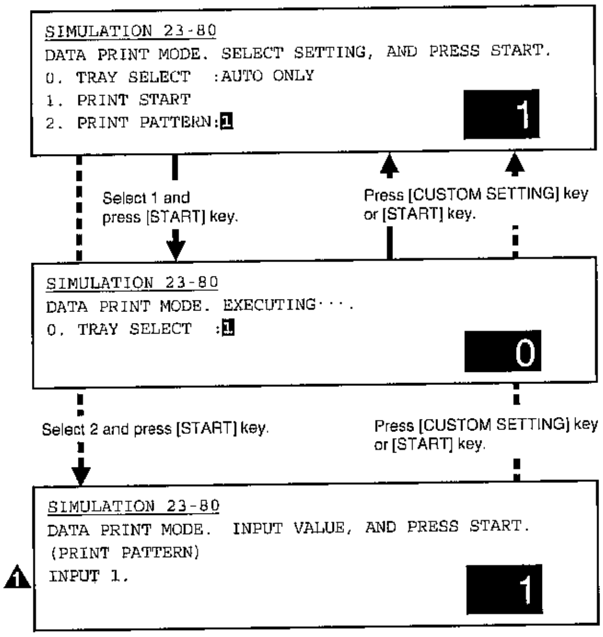
Operation/Procedure

1) Select "2. PRINT PATTERN."
2) Press [START] key.
3) Select "1" (Paper transport time data) with 10-key.
4) Press [START] key.

The list of the ON time of the sensors and the detectors of the paper transport section is printed. When a paper jam or misfeed is generated, the ON time of each sensor and detector is checked to check if the operation of the sensor and the detector, paper feed, and transport are normal or not.

⚠ : Feb. 9 2004

0	TRAY SELECT AUTO ONLY	Auto only (No selection allowed)
1	PRINT START	Print execution Print of the set data is executed.
2	PRINT PATTERN	Print pattern 1. Paper transport time data



```
SIMULATION 23-80
DATA PRINT MODE. SELECT SETTING, AND PRESS START.
0. TRAY SELECT  :AUTO ONLY
1. PRINT START
2. PRINT PATTERN:1
```

```
SIMULATION 23-80
DATA PRINT MODE. EXECUTING···.
0. TRAY SELECT  :1
```

```
SIMULATION 23-80
DATA PRINT MODE.  INPUT VALUE, AND PRESS START.
(PRINT PATTERN)
INPUT 1.
```

1
Select 1 and press [START] key.
Press [CUSTOM SETTING] key or [START] key.
0
Select 2 and press [START] key.
Press [CUSTOM SETTING] key or [START] key.
1

24

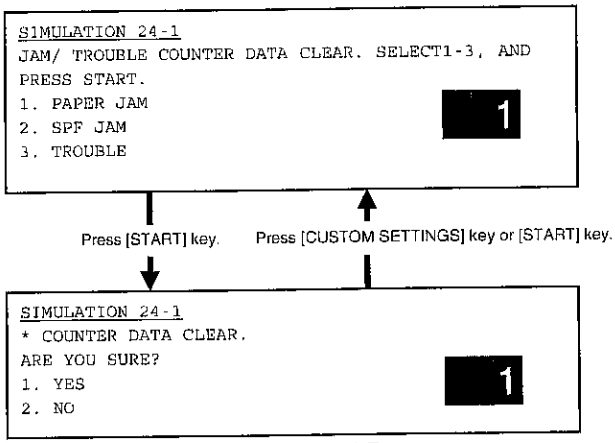
24-1

Purpose	Data clear
Function (Purpose)	Used to clear the misfeed counter, the misfeed history, the trouble counter, and the trouble history. (The counters are cleared after completion of maintenance.)
Section	
Item	Counter

Operation/Procedure

1) Select the counter to be cleared with 10-key.
2) Press [START] key.
   The confirmation to clear is opened.
3) Select Yes/NO of counter clear with 10-key.
   YES: Clear
   NO: Not clear
4) Press [START] key.

1	PAPER JAM	Number of paper jams
2	SPF JAM	Number of SPF jams
3	TROUBLE	Number of troubles



```
SIMULATION 24-1
JAM/ TROUBLE COUNTER DATA CLEAR. SELECT1-3, AND
PRESS START.
1. PAPER JAM
2. SPF JAM
3. TROUBLE
```

```
SIMULATION 24-1
* COUNTER DATA CLEAR.
ARE YOU SURE?
1. YES
2. NO
```

1
Press [START] key.
Press [CUSTOM SETTINGS] key or [START] key.
1

* = PAPER JAM, SPF JAM, TROUBLE

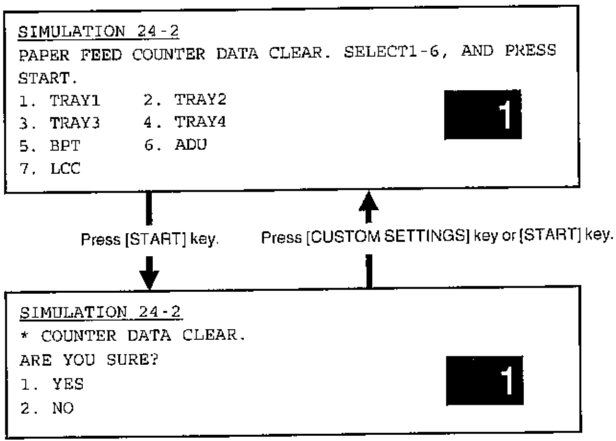
24-2

Purpose	Data clear
Function (Purpose)	Used to clear the number of use (the number of prints) of each paper feed section.
Section	Paper feed
Item	Counter

Operation/Procedure

1) Select the counter to be cleared with 10-key.
2) Press [START] key.
   The confirmation to clear is opened.
3) Select Yes/NO of counter clear with 10-key.
   YES: Clear
   NO: Not clear
4) Press [START] key.

1	TRAY1	Tray 1 use quantity
2	TRAY2	Tray 2 use quantity
3	TRAY3	Tray 3 use quantity
4	TRAY4	Tray 4 use quantity
5	BPT	Manual feed tray use quantity
6	ADU	Duplex feed quantity
7	LCC	Side LCC use quantity



```
SIMULATION 24-2
PAPER FEED COUNTER DATA CLEAR. SELECT1-6, AND PRESS
START.
1. TRAY1    2. TRAY2
3. TRAY3    4. TRAY4
5. BPT      6. ADU
7. LCC
```

```
SIMULATION 24-2
* COUNTER DATA CLEAR.
ARE YOU SURE?
1. YES
2. NO
```

1
Press [START] key.
Press [CUSTOM SETTINGS] key or [START] key.
1

* = TRAY1, TRAY2, TRAY3, TRAY4, BPT, ADU, LCC

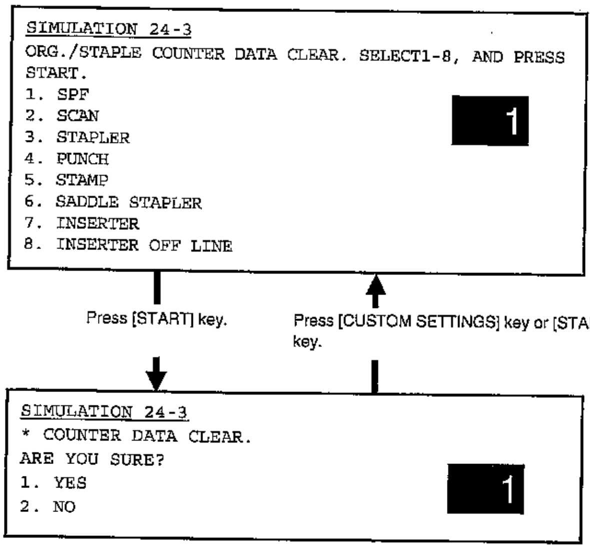
24-3

Purpose	Data clear
Function (Purpose)	Used to clear the number of use of the finisher, SPF, and the scan (reading) unit.
Section	
Item	Counter

Operation/Procedure

1) Select the counter to be cleared with 10-key.
2) Press [START] key.
   The confirmation to clear is opened.
3) Select Yes/NO of counter clear with 10-key.
   YES: Clear
   NO: Not clear
4) Press [START] key.

1	SPF	SPF paper pass quantity
2	SCAN	Number of times of document scan
3	STAPLER	Number of times of stapling
4	PUNCH	Number of times of punching
5	STAMP	Number of times of SPF finish stamp
6	SADDLE STAPLER	Number of times of saddle stapling
7	INSERTER	Number of times inserter operations



```
SIMULATION 24-3
ORG./STAPLE COUNTER DATA CLEAR. SELECT1-8, AND PRESS
START.
1. SPF
2. SCAN
3. STAPLER
4. PUNCH
5. STAMP
6. SADDLE STAPLER
7. INSERTER
8. INSERTER OFF LINE                                1
```

Press [START] key.

Press [CUSTOM SETTINGS] key or [START] key.

```
SIMULATION 24-3
* COUNTER DATA CLEAR.
ARE YOU SURE?
1. YES
2. NO                                               1
```

* = SPF, SCAN, STAPLER, PUNCH, STAMP, SADDLE STAPLER, INSERTER

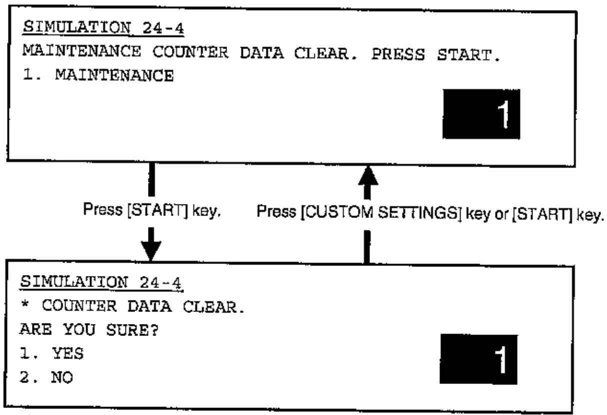
24-4

Purpose	Data clear
Function (Purpose)	Used to reset the maintenance counter.
Section	
Item	Counter

Operation/Procedure

1) Select the counter to be cleared with 10-key.
2) Press [START] key.
   The confirmation to clear is opened.
3) Select Yes/NO of counter clear with 10-key.
   YES: Clear
   NO: Not clear
4) Press [START] key.

1	MAINTENANCE	Maintenance counter



```
SIMULATION 24-4
MAINTENANCE COUNTER DATA CLEAR. PRESS START.
1. MAINTENANCE                                      1
```

Press [START] key.

Press [CUSTOM SETTINGS] key or [START] key.

```
SIMULATION 24-4
* COUNTER DATA CLEAR.
ARE YOU SURE?
1. YES
2. NO                                               1
```

* = MAINTENANCE

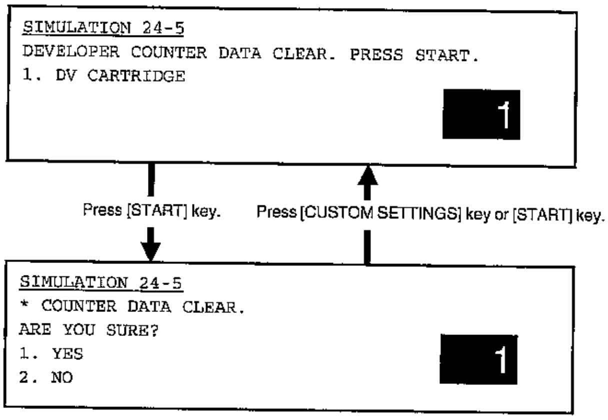
24-5

Purpose	Data clear	
Function (Purpose)	Used to reset the developer counter. (The developer counter of the DV unit which is installed is reset.)	
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)	
Item	Counter	Developer

Operation/Procedure

1) Select the counter to be cleared with 10-key.
2) Press [START] key.
   The confirmation to clear is opened.
3) Select Yes/NO of counter clear with 10-key.
   YES: Clear
   NO: Not clear
4) Press [START] key.

1	DV CARTRIDGE	Developer cartridge



```
SIMULATION 24-5
DEVELOPER COUNTER DATA CLEAR. PRESS START.
1. DV CARTRIDGE                                     1
```

Press [START] key.

Press [CUSTOM SETTINGS] key or [START] key.

```
SIMULATION 24-5
* COUNTER DATA CLEAR.
ARE YOU SURE?
1. YES
2. NO                                               1
```

⚠ * = DV CARTRIDGE

24-6

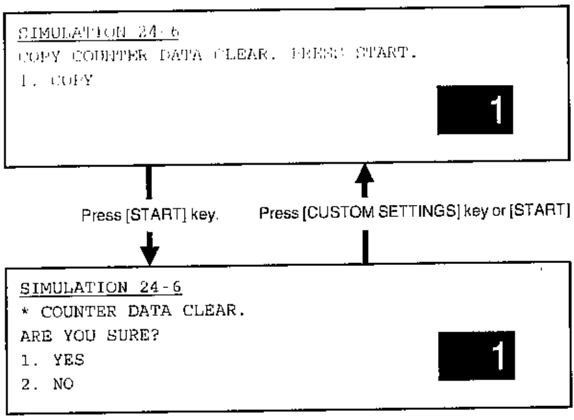
Purpose	Data clear	
Function (Purpose)	Used to reset the copy counter.	
Section		
Item	Counter	Copy

Operation/Procedure

1) Select the counter to be cleared with 10-key.
2) Press [START] key.
   The confirmation to clear is opened.
3) Select Yes/NO of counter clear with 10-key.
   YES: Clear
   NO: Not clear

4) Press [START] key.

1	COPY	Copy effective paper counter



```
SIMULATION 24-6
COPY COUNTER DATA CLEAR. PRESS START.
1. COPY
                                      1
```

```
SIMULATION 24-6
* COUNTER DATA CLEAR.
ARE YOU SURE?
1. YES                                1
2. NO
```

* = COPY

24-7

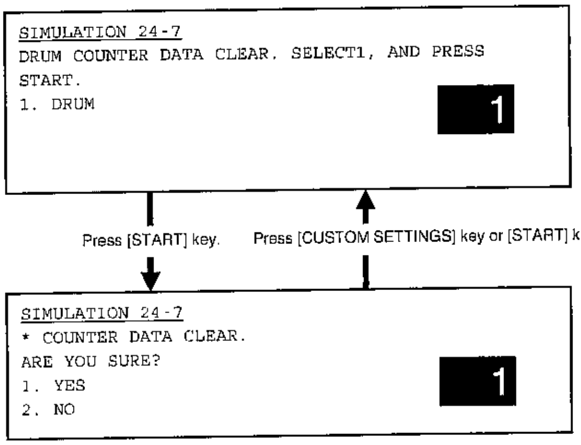
Purpose	Data clear
Function (Purpose)	Used to clear the OPC drum counter. (Perform this simulation when the OPC drum is replaced.)
Section	Image process (Photoconductor/Developing/Transfer/ Cleaning)
Item	Counter Photo conductor

Operation/Procedure

1) Select the counter to be cleared with 10-key.
2) Press [START] key.
   The confirmation to clear is opened.
3) Select Yes/NO of counter clear with 10-key.
   YES: Clear
   NO: Not clear
4) Press [START] key.

After replacing the OPC drum, be sure to clear the OPC drum counter.

1	DRUM	OPC drum counter



```
SIMULATION 24-7
DRUM COUNTER DATA CLEAR. SELECT1, AND PRESS
START.
1. DRUM                               1
```

```
SIMULATION 24-7
* COUNTER DATA CLEAR.
ARE YOU SURE?
1. YES                                1
2. NO
```

* = DRUM

24-9

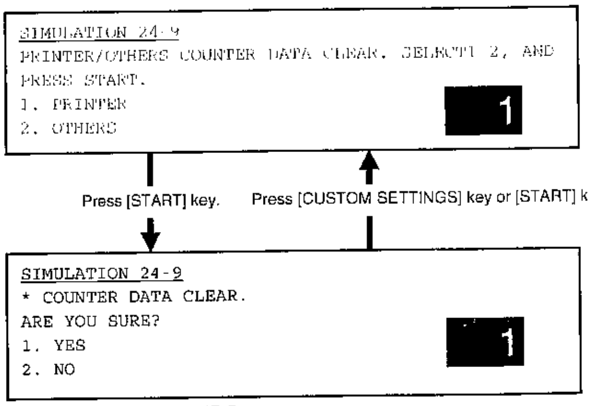
Purpose	Data clear
Function (Purpose)	Used clear the printer mode print counter and the self print mode print counter.
Section	Printer
Item	Counter

Operation/Procedure

1) Select the counter to be cleared with 10-key.
2) Press [START] key.
   The confirmation to clear is opened.
3) Select Yes/NO of counter clear with 10-key.
   YES: Clear
   NO: Not clear
4) Press [START] key.

After replacing the OPC drum, be sure to clear the OPC drum counter.

1	PRINTER	Printer counter (Print mode)
2	OTHERS	Other effective paper counter (Self print mode)



```
SIMULATION 24-9
PRINTER/OTHERS COUNTER DATA CLEAR. SELECT1 2, AND
PRESS START.
1. PRINTER                            1
2. OTHERS
```

```
SIMULATION 24-9
* COUNTER DATA CLEAR.
ARE YOU SURE?
1. YES                                1
2. NO
```

* = PRINTER, OTHERS

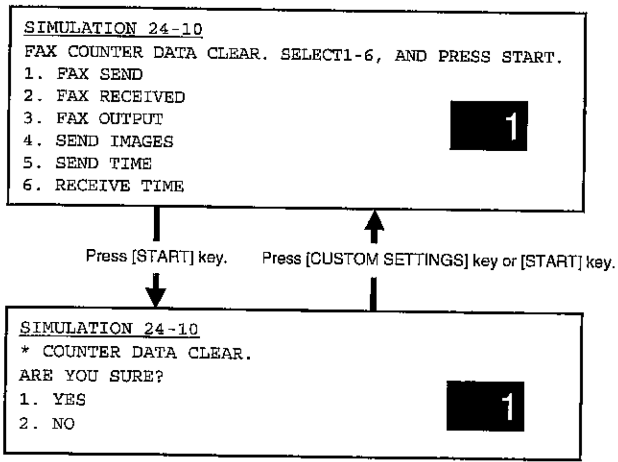
24-10

Purpose	Data clear
Function (Purpose)	Used to clear the FAX counter. (Only when FAX is installed)
Section	FAX
Item	Counter

Operation/Procedure

1) Select the counter to be cleared with 10-key.
2) Press [START] key.
   The confirmation to clear is opened.
3) Select Yes/NO of counter clear with 10-key.
   YES: Clear
   NO: Not clear
4) Press [START] key.

1	FAX SEND	Number of times of FAX send
2	FAX RECEIVE	Number of times of FAX receive
3	FAX OUTPUT	FAX print quantity
4	SEND IMAGES	Send quantity
5	SEND TIME	Send time
6	RECEIVE TIME	Receive time



```
SIMULATION 24-10
FAX COUNTER DATA CLEAR. SELECT1-6, AND PRESS START.
1. FAX SEND
2. FAX RECEIVED
3. FAX OUTPUT
4. SEND IMAGES
5. SEND TIME
6. RECEIVE TIME
```

```
SIMULATION 24-10
* COUNTER DATA CLEAR.
ARE YOU SURE?
1. YES
2. NO
```

* = FAX SEND, FAX RECEIVED, FAX OUTPUT, SEND IMAGES, SEND TIME, RECEIVE TIME

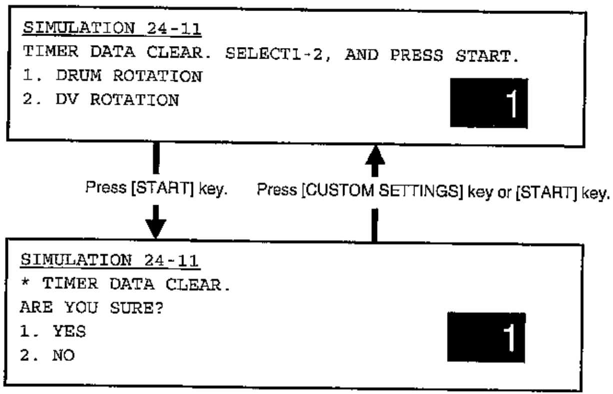
24-11

Purpose	Data clear
Function (Purpose)	Used to reset the OPC drum rotation time, and the DV unit rotation time counter. The developer counter in the DV unit installed is reset.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)
Item	Counter Developer

Operation/Procedure

1) Select the counter to be cleared with 10-key.
2) Press [START] key.
   The confirmation to clear is opened.
3) Select Yes/NO of counter clear with 10-key.
   YES: Clear
   NO: Not clear
4) Press [START] key.

1	DRUM ROTATION	OPC drum rotation time
2	DV ROTATION	DV unit rotation time



```
SIMULATION 24-11
TIMER DATA CLEAR. SELECT1-2, AND PRESS START.
1. DRUM ROTATION
2. DV ROTATION
```

```
SIMULATION 24-11
* TIMER DATA CLEAR.
ARE YOU SURE?
1. YES
2. NO
```

* = DRUM ROTATION, DV ROTATION

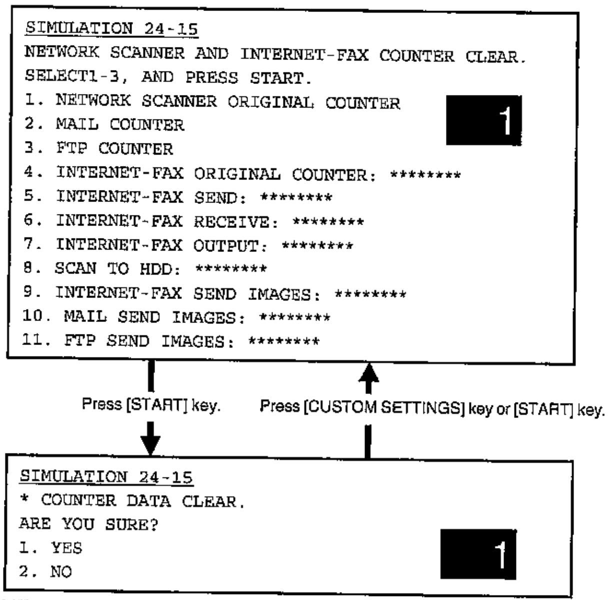
24-15

Purpose	Data clear
Function (Purpose)	Used to clear the counters related to the scan mode and the internet FAX mode.
Section	
Item	Counter

Operation/Procedure

1) Select the counter to be cleared with 10-key.
2) Press [START] key.
   The confirmation to clear is opened.
3) Select Yes/NO of counter clear with 10-key.
   YES: Clear
   NO: Not clear
4) Press [START] key.

1	NETWORK SCANNER ORIGINAL COUNTER	Document scan quantity counter in the network scanner mode
2	MAIL COUNTER	Number of times of mail send
3	FTP COUNTER	Number of times of FTP send
4	INTERNET-FAX ORIGINAL COUNTER	Internet FAX document scan quantity (Total quantity of OC and SPF)
5	INTERNET-FAX SEND	Number of times of internet FAX send
6	INTERNET-FAX RECEIVE	Number of times of internet FAX receive
7	INTERNET-FAX OUTPUT	Internet FAX print quantity
8	SCAN TO HDD	SCAN TO HDD record quantity
9	INTERNET-FAX SEND IMAGES	IFAX send quantity counter
10	MAIL SEND IMAGES	MAIL send quantity counter
11	FTP SEND IMAGES	FTP send quantity counter



```
SIMULATION 24-15
NETWORK SCANNER AND INTERNET-FAX COUNTER CLEAR.
SELECT1-3, AND PRESS START.
1. NETWORK SCANNER ORIGINAL COUNTER
2. MAIL COUNTER
3. FTP COUNTER
4. INTERNET-FAX ORIGINAL COUNTER: ********
5. INTERNET-FAX SEND: ********
6. INTERNET-FAX RECEIVE: ********
7. INTERNET-FAX OUTPUT: ********
8. SCAN TO HDD: ********
9. INTERNET-FAX SEND IMAGES: ********
10. MAIL SEND IMAGES: ********
11. FTP SEND IMAGES: ********
```

```
SIMULATION 24-15
* COUNTER DATA CLEAR.
ARE YOU SURE?
1. YES
2. NO
```

* = NETWORK SCANNER ORIGINAL, MAIL, FTP, INTERNET-FAX ORIGINAL COUNTER, INTERNET-FAX SEND, INTERNET-FAX RECEIVE, INTERNET-FAX OUTPUT, SCAN TO HDD, INTERNET-FAX SEND IMAGES, MAIL SEND IMAGES, FTP SEND IMAGES

25

25-1

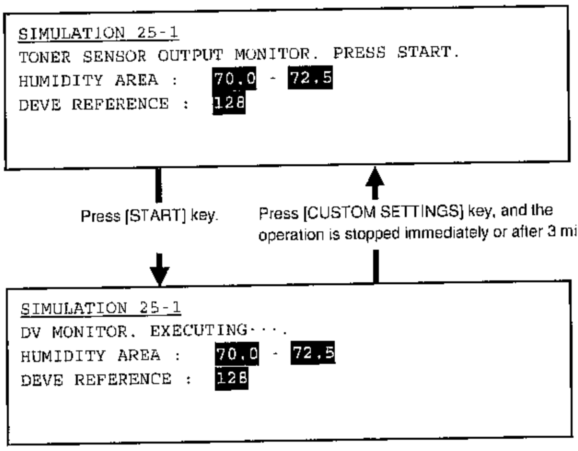
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the developing section (toner concentration, humidity and toner concentration sensor, humidity sensor). (The toner concentration sensor output can be monitored.)
Section	Process (Developing section)
Item	Operation

⚠ : Feb. 9 2004

Operation/Procedure

1) Press [START] key.

The developing motor and the OPC drum motor rotate, and the toner concentration detection level and the humidity sensor detection level are displayed.



```
SIMULATION 25-1
TONER SENSOR OUTPUT MONITOR. PRESS START.
HUMIDITY AREA :  70.0 - 72.5
DEVE REFERENCE : 128
```

Press [START] key.
Press [CUSTOM SETTINGS] key, and the operation is stopped immediately or after 3 min.

```
SIMULATION 25-1
DV MONITOR. EXECUTING····.
HUMIDITY AREA :  70.0 - 72.5
DEVE REFERENCE : 128
```

25-2

Purpose	Setting
Function (Purpose)	Used to make the initial setting of toner concentration when replacing developer.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)
Item	

Operation/Procedure

1) Press [START] key.

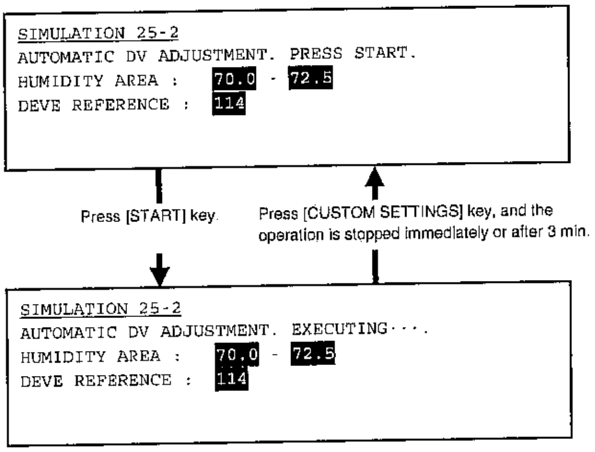
The developing motor rotates for 3 min and the toner concentration sensor makes sampling of toner concentration to display the detection level.

After the developing motor stops, the average value of toner concentration sampling is set as the reference toner concentration level.

⚠ 2) The humidity near the developing tank at the developing adjustment is registered.

NOTE: When the above operation is interrupted on the way, the reference toner concentration level is not set. Also when error code of EE-EL or EE-EU is displayed, the reference toner concentration level is not set normally.

(Default: 114)



```
SIMULATION 25-2
AUTOMATIC DV ADJUSTMENT. PRESS START.
HUMIDITY AREA :  70.0 - 72.5
DEVE REFERENCE : 114
```

Press [START] key.
Press [CUSTOM SETTINGS] key, and the operation is stopped immediately or after 3 min.

```
SIMULATION 25-2
AUTOMATIC DV ADJUSTMENT. EXECUTING····.
HUMIDITY AREA :  70.0 - 72.5
DEVE REFERENCE : 114
```

26

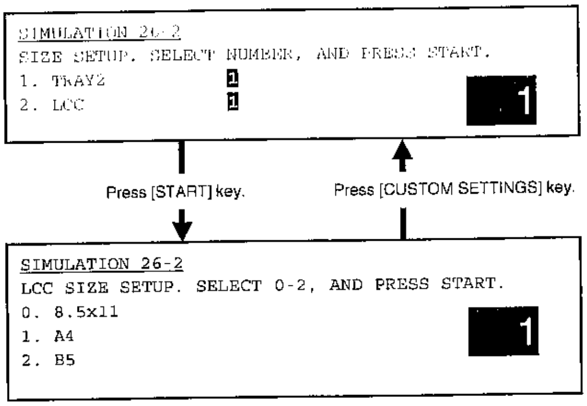
26-2

Purpose	Setting
Function (Purpose)	Used to set the paper size of the large capacity tray (LCC) and the paper feed tray 2. (When the paper size is changed, this simulation must be executed to change the paper size in software.)
Section	Paper feed
Item	Setting

Operation/Procedure

1) Select the number corresponding to the paper feed unit for setting the paper size with 10-key.
2) Press [START] key.
3) Select the number corresponding to the paper size.
4) Press [START] key.

1	TRAY 2	TRAY 2 size (0 = 8.5 x 11, 1 = A4, 2 = B5)
2	LCC	Side LCC size (0 = 8.5 x 11, 1 = A4, 2 = B5)



```
SIMULATION 26-2
SIZE SETUP. SELECT NUMBER, AND PRESS START.
1. TRAY2              1
2. LCC                1                  1
```

```
SIMULATION 26-2
LCC SIZE SETUP. SELECT 0-2, AND PRESS START.
0. 8.5x11
1. A4                                    1
2. B5
```

26-3

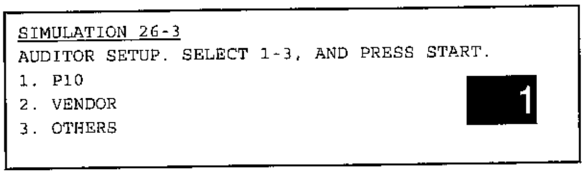
Purpose	Setting
Function (Purpose)	Used to set the specifications of the auditor. Setting must be made according to the auditor use conditions.
Section	Auditor
Item	Specifications

Operation/Procedure

1) Select the number corresponding to the auditor mode with 10-key.
2) Press [START] key.

1	P10	Built-in auditor mode
2	VENDOR	Coin vendor mode
3	OTHERS	Other

(Default: 1)



```
SIMULATION 26-3
AUDITOR SETUP. SELECT 1-3, AND PRESS START.
1. P10
2. VENDOR                                1
3. OTHERS
```

26-5

Purpose	Setting
Function (Purpose)	Used to set the count mode of the total counter and the maintenance counter.
Section	
Item	Specifications Counter

Operation/Procedure

1) Select the number corresponding to the counter to be set with 10-key.
2) Press [START] key.
3) Select the count mode with 10-key.
4) Press [START] key.

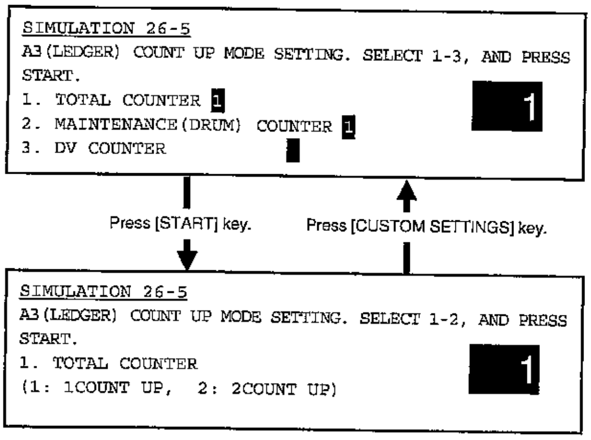
Set the count-up (1 or 2) for A3/WLT paper.

(Select the target counter.)

1	TOTAL COUNTER	Total counter
2	MAINTENANCE (DRUM) COUNTER	Maintenance counter/ OPC drum counter
3	DV COUNTER	Developer counter

(Count-up)

1	1 COUNT UP	1 count-up	
2	2 COUNT UP	2 count-up	Default



```
SIMULATION 26-5
A3(LEDGER) COUNT UP MODE SETTING. SELECT 1-3, AND PRESS
START.
1. TOTAL COUNTER 1
2. MAINTENANCE(DRUM) COUNTER 1
3. DV COUNTER                                    1
```

Press [START] key.   Press [CUSTOM SETTINGS] key.

```
SIMULATION 26-5
A3(LEDGER) COUNT UP MODE SETTING. SELECT 1-2, AND PRESS
START.
1. TOTAL COUNTER
(1: 1COUNT UP,  2: 2COUNT UP)                    1
```

26-6

Purpose	Setting
Function (Purpose)	Used to set the specifications (paper, fixed magnification ratio, etc.) of the destination.
Section	
Item	Specifications Destination

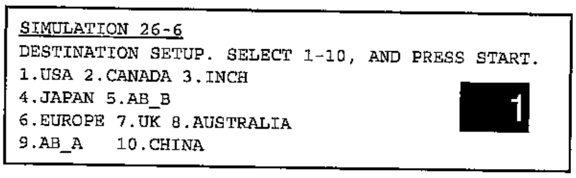
Operation/Procedure

1) Select the number corresponding to the destination with 10-key.
2) Press [START] key.

After completion of setting, the machine is automatically reset.

1	USA	United States of America
2	CANADA	Canada
3	INCH	Inch series EX
4	JAPAN	Japan
5	AB_B	AB series B5
6	EUROPE	Europe
7	UK	UK
8	AUSTRALIA	Australia
9	AB_A	AB series A5
10	CHINA	China

Since this simulation cannot change the Fax destination, use SIM 66-2 to change the FAX destination.



```
SIMULATION 26-6
DESTINATION SETUP. SELECT 1-10, AND PRESS START.
1.USA 2.CANADA 3.INCH
4.JAPAN 5.AB_B
6.EUROPE 7.UK 8.AUSTRALIA                        1
9.AB_A   10.CHINA
```

26-10

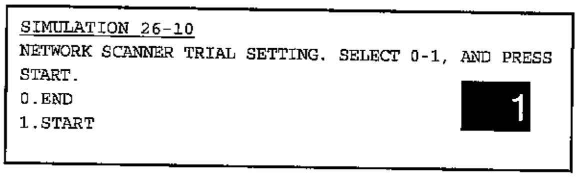
Purpose	Setting
Function (Purpose)	Used to set the network scanner trial mode.
Section	
Item	Operation

Operation/Procedure

1) Select START/END of the network scanner trial mode with 10-key.
2) Press [START] key.

Max. 500 menus can be scanned.

0	END	Trial mode cancel	Default
1	START	Trial mode start	



```
SIMULATION 26-10
NETWORK SCANNER TRIAL SETTING. SELECT 0-1, AND PRESS
START.
0.END                                            1
1.START
```

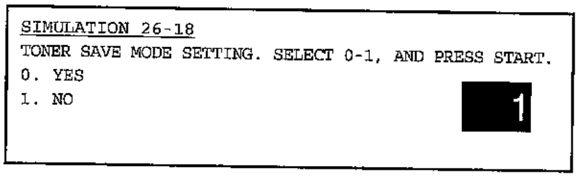
26-18

Purpose	Setting
Function (Purpose)	Used to set YES/NO of toner save operation. (This function is valid only in Japan and UK versions. (Depends on the destination setting of SIM26-6.) For the other destinations, the same setting can be made by the user program P22.)
Section	
Item	Specifications Operation mode

Operation/Procedure

1) Select YES/NO of the toner save mode with 10-key.
2) Press [START] key.

0	YES	Toner save mode is set.	
1	NO	Toner save mode is not set.	Default



```
SIMULATION 26-18
TONER SAVE MODE SETTING. SELECT 0-1, AND PRESS START.
0. YES
1. NO                                            1
```

26-30

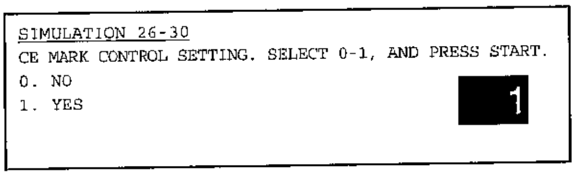
Purpose	Setting
Function (Purpose)	Used to set the operation mode conforming to the CE mark (Europe safety standards). (Conforming to soft start when driving the fusing heater lamp.)
Section	
Item	Specifications Operation mode (Common)

Operation/Procedure

1) Select the number corresponding to the operation mode with 10-key.
2) Press [START] key.

0	NO	CE mark control NO (Normal operation)
1	YES	CE mark control YES (Heater lamp soft start operation)

(Default: 1 for Europe, 0 for the others)



```
SIMULATION 26-30
CE MARK CONTROL SETTING. SELECT 0-1, AND PRESS START.
0. NO
1. YES                                            1
```

26-35

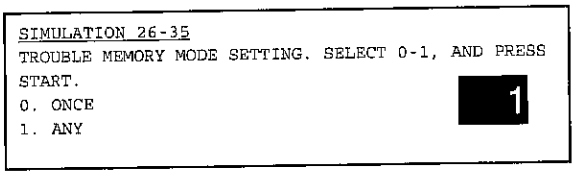
Purpose	Setting
Function (Purpose)	Used to set whether the same continuous troubles are displayed as one trouble or the series of troubles with SIM 22-4 when the same troubles occur continuously.
Section	
Item	Specifications

Operation/Procedure

1) Select the number corresponding to the operation mode with 10-key.
2) Press [START] key.

0	ONCE	When two or more troubles of a same kind occur continuously, the troubles are displayed as one trouble in the trouble history of SIM22-4.
⚠ 1	ANY	When two or more troubles of a same kind occur continuously, the troubles are displayed straightly as two or more troubles in the trouble history of SIM22-4.

(Default: 0)



```
SIMULATION 26-35
TROUBLE MEMORY MODE SETTING. SELECT 0-1, AND PRESS
START.
0. ONCE                                           1
1. ANY
```

26-38

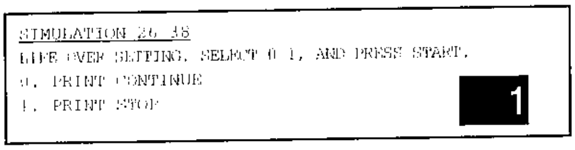
Purpose	Setting
⚠ **Function (Purpose)**	Used to set CONTINUE/STOP of printing when maintenance timing is over and the count value reaches 110% of replacement timing (life).
Section	Other
Item	Specifications

Operation/Procedure

1) Select the number corresponding to the operation mode with 10-key.
2) Press [START] key.

0	PRINT CONTINUE	Print continue
1	PRINT STOP	Print stop

(Default: 0)



```
SIMULATION 26-38
LIFE OVER SETTING. SELECT 0-1, AND PRESS START.
0. PRINT CONTINUE
1. PRINT STOP                                     1
```

26-41

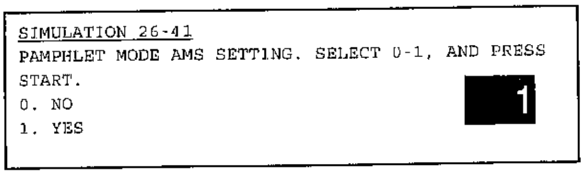
Purpose	Setting	
Function (Purpose)	Used to set YES/NO of the automatic magnification ratio selection (AMS) in the pamphlet mode.	
Section		
Item	Specifications	Operation mode (Common)

Operation/Procedure

⚠ 1) Enter the number corresponding to whether AMS operation is automatically performed or nor in the center binding mode with the 10-key.
2) Press [START] key.

⚠ 0	NO	AMS/APS selection allowed
1	YES	AMS is forcibly operated.

(Default: 1 for Europe and UK, 0 for the others)



```
SIMULATION 26-41
PAMPHLET MODE AMS SETTING. SELECT 0-1, AND PRESS
START.
0. NO                                             1
1. YES
```

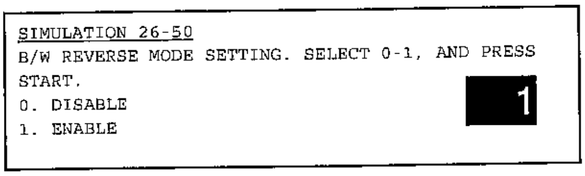
26-50

Purpose	Setting	
Function (Purpose)	Black-White reverse YES/NO setting	
Section		
Item	Specifications	Operation

Operation/Procedure

1) Select ENABLE/DISABLE of the B/W reverse mode with 10-key.
2) Press [START] key.

0	DISABLE	B/W reverse mode DISABLE	
1	ENABLE	B/W reverse mode ENABLE	Default



```
SIMULATION 26-50
B/W REVERSE MODE SETTING. SELECT 0-1, AND PRESS
START.
0. DISABLE                                        1
1. ENABLE
```

26-52

Purpose	Setting	
Function (Purpose)	Used to set whether non-print paper (insertion paper, cover paper) (blank image print paper) is counted up or not.	
Section	Paper transport (Discharge/Switchback/Transport)	
Item	Specifications	Operation mode

Operation/Procedure

1) Select YES/NO of the non-print paper count-up with 10-key.
2) Press [START] key.

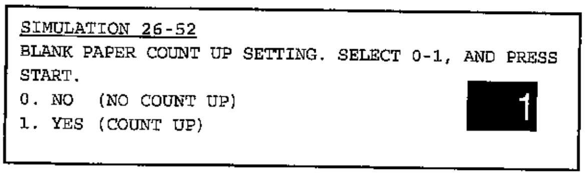
Non-print paper means an insert paper (without copying) in the OHP insertion mode, a cover (without copying) in the cover insertion mode, back surface, and white paper in the duplex exit mode (CA, etc.).

0	NO (NO COUNT UP)	No count up
1	YES (COUNT UP)	Count up

(Default: 0 for Japan and Australia, 1 for the other)

The target counters are as follows:

- Copies counter
- Printer counter
- Department management counter
- ⚠ Total counter
- Effective paper counter



```
SIMULATION 26-52
BLANK PAPER COUNT UP SETTING. SELECT 0-1, AND PRESS
START.
0. NO  (NO COUNT UP)                              1
1. YES (COUNT UP)
```

26-68

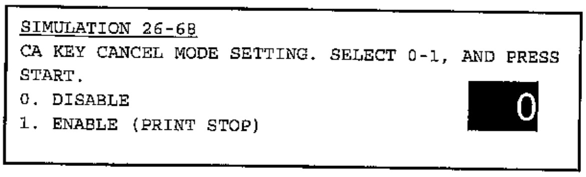
Purpose	Setting
Function (Purpose)	Used to set ENABLE/DISABLE of the CA key cancel function of print stop.
Section	
Item	Specifications Operation

Operation/Procedure

1) Select ENABLE/DISABLE of the CA key cancel function of print stop with 10-key.
2) Press [START] key.

0	DISABLE	Disable
1	ENABLE (PRINT STOP)	Enable

(Default: 1)



```
SIMULATION 26-68
CA KEY CANCEL MODE SETTING. SELECT 0-1, AND PRESS
START.
0. DISABLE                                        0
1. ENABLE (PRINT STOP)
```

27

27-1

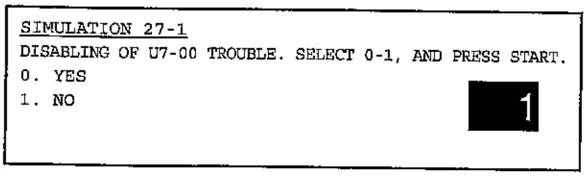
Purpose	Setting
Function (Purpose)	Used to set the specifications for operations in case of communication trouble between the host computer and MODEM (machine side). (When communication trouble occurs between the host computer MODEM and the machine, the self diag display (U7-00) is printed and setting for inhibition of print or not is made.)
Section	Communication unit (TEL/LIU/MODEM etc.)
Item	Specifications Operation mode

Operation/Procedure

1) Select the number corresponding to the operation mode with 10-key.
2) Press [START] key.

0	YES	Though a communication trouble occurs between the host computer and the MODEM (machine side), there is no effect on the machine operations.
1	NO	When a communication trouble occurs between the host computer and the MODEM (machine side), the self diag display (U7-00) is displayed and printing is inhibited.

(Default: 0)



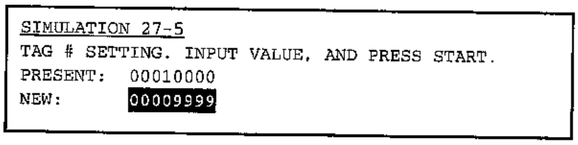
```
SIMULATION 27-1
DISABLING OF U7-00 TROUBLE. SELECT 0-1, AND PRESS START.
0. YES
1. NO                                             1
```

27-5

Purpose	Setting
Function (Purpose)	Used to enter the machine tag No. (This function allows to check the tag No. of the machine with the host computer.)
Section	Communication unit (TEL/LIU/MODEM etc.)
Item	Specifications Operation mode

Operation/Procedure

1) Enter the tag number with 10-key.
2) Press [START] key.



```
SIMULATION 27-5
TAG # SETTING. INPUT VALUE, AND PRESS START.
PRESENT:  00010000
NEW:      00009999
```

30

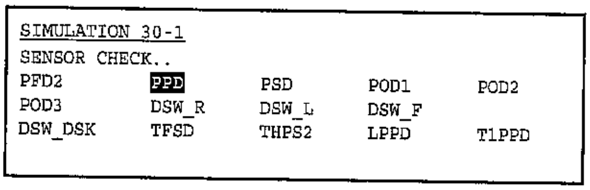
30-1

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of sensors and detectors in other than the paper feed section and the operations of the related circuits.
Section	
Item	Operation

Operation/Procedure

The operating conditions of sensors and detectors are displayed. The active sensors and detectors are highlighted.

PFD2	ADU paper feed detection 2
PPD	Resist roller front paper detection
PSD	Drum rear paper detection
POD1	After-fusing transport detection 1
POD2	After-fusing transport detection 2
POD3	Paper full detection
DSW_R	Manual feed door open detection
DSW_L	Cabinet open detection
DSW_F	Front cabinet open detection
DSW_DSK	Desk door open detection
TFSD	Toner remaining quantity detection (Motor rotation number count)
THPS2	Transfer belt separation home sensor 2
LPPD	LCC paper transport detection
T1PPD	Tandem tray 1 paper transport sensor



```
SIMULATION 30-1
SENSOR CHECK..
PFD2      PPD     PSD      POD1     POD2
POD3      DSW_R   DSW_L    DSW_F
DSW_DSK   TFSD    THPS2    LPPD     T1PPD
```

30-2

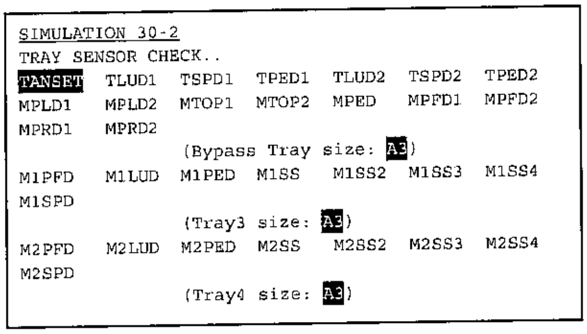
Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of sensors and detectors in the paper feed section and the related circuits.
Section	Paper feed
Item	Operation

Operation/Procedure

The operating conditions of sensors and detectors are displayed.

The active sensors and detectors are highlighted.

⚠ TANSET	Tray 1 and 2 insertion detection
TLUD1	Tray 1 upper limit sensor
TSPD1	Tray 1 remaining quantity sensor
TPED1	Tray 1 paper sensor
TLUD2	Tray 2 upper limit sensor
TSPD2	Tray 2 remaining quantity sensor
TPED2	Tray 2 paper sensor
MPLD1	Manual feed length detection 1
MPLD2	Manual feed length detection 2
MTOP1	Manual pull-out sensor 1
MTOP2	Manual pull-out sensor 2
MPED	Manual feed paper empty detection 2
MPFD1	Detection 1 of paper pass from manual paper feed
MPFD2	Detection 2 of paper pass from manual paper feed
MPRD1	Manual relay paper detection 1
MPRD2	Manual relay paper detection 2
Bypass Tray size: (The manual feed tray detection size is displayed.)	
⚠ M1PFD	Tray 3 transport detection
M1LUD	Tray 3 upper limit detection
M1PED	Tray 3 paper empty detection
M1SS1	Tray 3 rear edge switch 1
M1SS2	Tray 3 rear edge switch 2
M1SS3	Tray 3 rear edge switch 3
M1SS4	Tray 3 rear edge switch 4
M1SPD	Tray 3 paper remaining quantity detection
Tray 3 size: (The tray 3 detection size is displayed.)	
⚠ M2PFD	Tray 4 transport detection
M2LUD	Tray 4 upper limit detection
M2PED	Tray 4 paper empty detection
M2SS1	Tray 4 rear edge switch 1
M2SS2	Tray 4 rear edge switch 2
M2SS3	Tray 4 rear edge switch 3
M2SS4	Tray 4 rear edge switch 4
M2SPD	Tray 4 paper remaining quantity detection
Tray 4 size: (The tray 4 detection size is displayed.)	



```
SIMULATION 30-2
TRAY SENSOR CHECK..
TANSET   TLUD1   TSPD1   TPED1   TLUD2   TSPD2   TPED2
MPLD1    MPLD2   MTOP1   MTOP2   MPED    MPFD1   MPFD2
MPRD1    MPRD2
                 (Bypass Tray size: A3)
M1PFD    M1LUD   M1PED   M1SS    M1SS2   M1SS3   M1SS4
M1SPD
                 (Tray3 size: A3)
M2PFD    M2LUD   M2PED   M2SS    M2SS2   M2SS3   M2SS4
M2SPD
                 (Tray4 size: A3)
```

40

40-1

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the manual feed tray paper size detector and the related circuit. (The operation of the manual feed tray paper size detector can be monitored with the LCD display.)
Section	Paper feed
Item	Operation

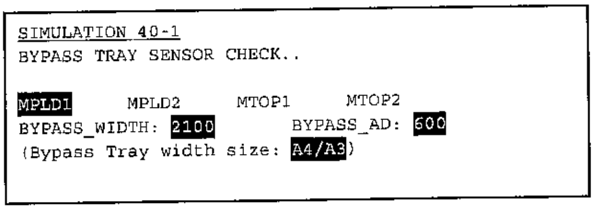
Operation/Procedure

The operating conditions of sensors and detectors are displayed.

The active sensors and detectors are highlighted.

The paper width size detection level is displayed.

MPLD1	Manual tray length detection 1
MPLD2	Manual tray length detection 2
MTOP1	Manual tray pull-out detection 1
MTOP2	Manual tray pull-out detection 2
BYPASS_WIDTH	Manual feed guide plate position
BYPASS_AD	Manual feed width detection volume output AD value
Bypass Tray width size	(Manual tray detection size is displayed.) A4/A3, 11 x, B5/B4, 8.5 x , A4R, B5R, A5R, 5.5x, 7.25x, EXTRA



```
SIMULATION 40-1
BYPASS TRAY SENSOR CHECK..

MPLD1      MPLD2      MTOP1      MTOP2
BYPASS_WIDTH: 2100         BYPASS_AD: 600
(Bypass Tray width size: A4/A3)
```

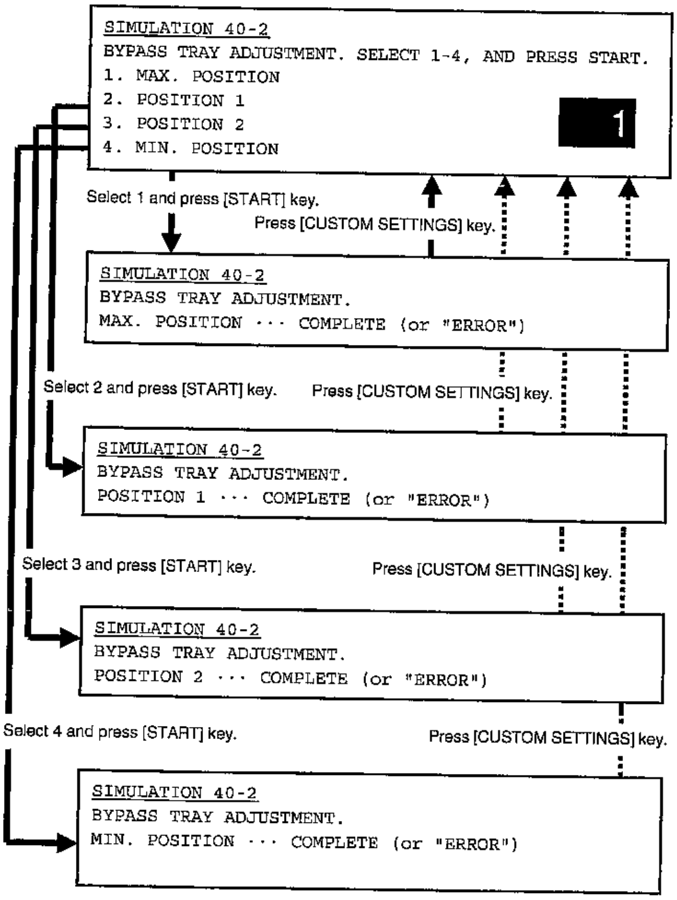
40-2

Purpose	Adjustment
Function (Purpose)	Used to adjust the manual paper feed tray paper width detector detection level.
Section	Paper feed
Item	Operation

Operation/Procedure

1) Open the manual paper feed guide to the max. width.
2) Select MAX POSITION with 10-key.
3) Press [START] key.
   The max. width detection level is recognized.
4) Press [CUSTOM SETTINGS] key.
5) Set the manual paper feed guide to A4R size width.
6) Select POSITION with 10-key.
7) Press [START] key.
   The A4R width detection level is recognized.
8) Press [CUSTOM SETTINGS] key.
9) ⚠ Set the manual paper feed guide to A5/A5R size width.
10) Select POSITION2 with 10-key.
11) Press [START] key.
    ⚠ The A5/A5R width detection level is recognized.
12) Press [CUSTOM SETTINGS] key.
13) Open the manual paper feed guide to the min. width.
14) Select MIN POSITION with 10-key.
15) Press [START] key.
    The min. width detection level is recognized.

If the above procedures are not completed normally, "ERROR" is displayed. If completed normally, "COMPLETE" is displayed.



```
SIMULATION 40-2
BYPASS TRAY ADJUSTMENT. SELECT 1-4, AND PRESS START.
1. MAX. POSITION
2. POSITION 1
3. POSITION 2
4. MIN. POSITION                                  1
```

```
SIMULATION 40-2
BYPASS TRAY ADJUSTMENT.
MAX. POSITION ··· COMPLETE (or "ERROR")
```

```
SIMULATION 40-2
BYPASS TRAY ADJUSTMENT.
POSITION 1 ··· COMPLETE (or "ERROR")
```

```
SIMULATION 40-2
BYPASS TRAY ADJUSTMENT.
POSITION 2 ··· COMPLETE (or "ERROR")
```

```
SIMULATION 40-2
BYPASS TRAY ADJUSTMENT.
MIN. POSITION ··· COMPLETE (or "ERROR")
```

Select 1 and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 2 and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 3 and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 4 and press [START] key.
Press [CUSTOM SETTINGS] key.

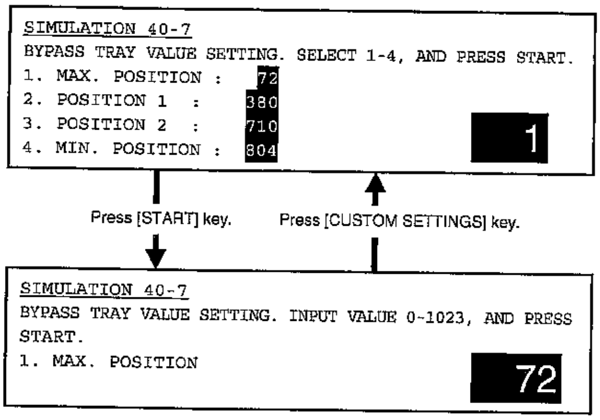
40-7

Purpose	Adjustment/Setup
Function (Purpose)	Used to enter the manual paper feed tray paper width adjustment value.
Section	Paper feed
Item	Operation

Operation/Procedure

1) Select the number corresponding to the set item with 10-key.
2) Press [START] key.
3) Enter the set value with 10-key.
4) Press [START] key.

1	MAX. POSITION	Max. width
2	POSITION 1	Adjustment point 1
3	POSITION 2	Adjustment point 2
4	MIN. POSITION	Min. value



```
SIMULATION 40-7
BYPASS TRAY VALUE SETTING. SELECT 1-4, AND PRESS START.
1. MAX. POSITION :  72
2. POSITION 1   :  380
3. POSITION 2   :  710
4. MIN. POSITION :  804                        1
```

```
SIMULATION 40-7
BYPASS TRAY VALUE SETTING. INPUT VALUE 0-1023, AND PRESS
START.
1. MAX. POSITION
                                              72
```

40-11

Purpose	Operation test/Check
Function (Purpose)	Used to check the multi-purpose tray width detection adjustment value.
Section	Paper feed
Item	Operation

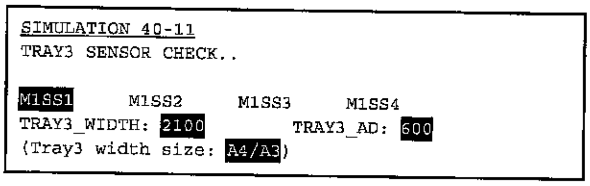
Operation/Procedure

The operating conditions of sensors and detectors are displayed.

The active sensors and detectors are highlighted.

The paper width detection level is also displayed.

⚠ M1SS1	Tray 3 size detection 1
M1SS2	Tray 3 size detection 2
M1SS3	Tray 3 detection size 3
M1SS4	Tray 3 size detection 4
TRAY3_WIDTH	Tray 3 guide plate position
TRAY3_AD	Tray 3 width detection volume output AD value
Tray3 width size	(Tray 3 width direction detection size is displayed.) A4/A3, 11X, B5/B4, 8.5X, A4R, B5R, A5R, 5.5X, 7.25X, EXTRA



```
SIMULATION 40-11
TRAY3 SENSOR CHECK..

M1SS1      M1SS2      M1SS3      M1SS4
TRAY3_WIDTH: 2100          TRAY3_AD: 600
(Tray3 width size: A4/A3)
```

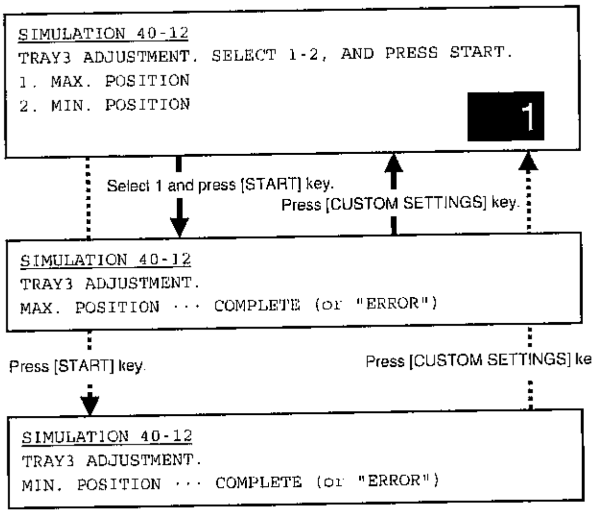
40-12

Purpose	Adjustment/Setup
Function (Purpose)	Used to check the multi-purpose tray width detection adjustment value.
Section	Paper feed
Item	Operation

Operation/Procedure

1) Open the paper feed tray 2 paper feed guide to the max. width position.
2) Select MAX POSITION with 10-key.
3) Press [START] key.
   The max. width detection level is recognized.
4) Press [CUSTOM SETTINGS] key.
5) Open the paper feed tray 3 paper feed guide to the min. width position.
6) Select MIN POSITION with 10-key.
7) Press [START] key.
   The min. width detection level is recognized.

If the above procedures are not completed normally, "ERROR" is displayed. If completed normally, "COMPLETE" is displayed.



```
SIMULATION 40-12
TRAY3 ADJUSTMENT. SELECT 1-2, AND PRESS START.
1. MAX. POSITION
2. MIN. POSITION                                1
```

Select 1 and press [START] key.

Press [CUSTOM SETTINGS] key.

```
SIMULATION 40-12
TRAY3 ADJUSTMENT.
MAX. POSITION ··· COMPLETE (or "ERROR")
```

Press [START] key.

Press [CUSTOM SETTINGS] key.

```
SIMULATION 40-12
TRAY3 ADJUSTMENT.
MIN. POSITION ··· COMPLETE (or "ERROR")
```

41

41-1

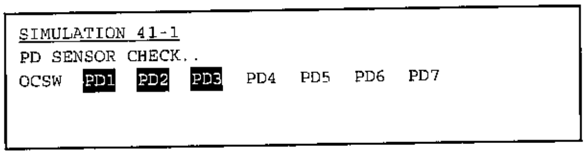
Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the document size sensor and the related circuit. (The operation of the document size sensor can be monitored with the LCD display.)
Section	Other
Item	Operation

Operation/Procedure

The operating conditions of sensors and detectors are displayed.

The active sensors and detectors are highlighted.

OCSW	Document cover status	Open: Normal display
		Close: Highlighted
PD1 - 7	Document detection sensor status	No document: Normal display
		Document present: Highlighted



```
SIMULATION 41-1
PD SENSOR CHECK..
OCSW  PD1  PD2  PD3  PD4  PD5  PD6  PD7
```

41-2

Purpose	Adjustment
Function (Purpose)	Used to adjust the document size sensor sensing level.
Section	Other
Item	Operation

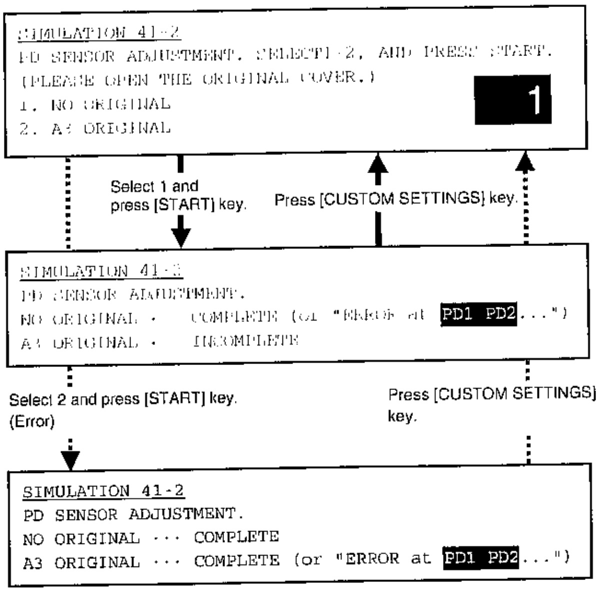
Operation/Procedure

1) Open the document cover and select NO ORIGINAL with 10-key without placing any document on the document table.
2) Press [START] key.

   The sensor level is set without document on the document table.
3) Place an A3 document on the document table, and select A3 ORIGINAL with 10-key.
4) Press [START] key.

   The sensor level is set when detection the document.

If the above procedures are not completed normally, "ERROR" is displayed. If completed normally, "COMPLETE" is displayed.



```
SIMULATION 41-2
PD SENSOR ADJUSTMENT. SELECT1-2, AND PRESS START.
(PLEASE OPEN THE ORIGINAL COVER.)
1. NO ORIGINAL                                    1
2. A3 ORIGINAL
```

Select 1 and press [START] key.

Press [CUSTOM SETTINGS] key.

```
SIMULATION 41-2
PD SENSOR ADJUSTMENT.
NO ORIGINAL ···  COMPLETE (or "ERROR at PD1 PD2...")
A3 ORIGINAL ···  INCOMPLETE
```

Select 2 and press [START] key.
(Error)

Press [CUSTOM SETTINGS] key.

```
SIMULATION 41-2
PD SENSOR ADJUSTMENT.
NO ORIGINAL ··· COMPLETE
A3 ORIGINAL ··· COMPLETE (or "ERROR at PD1 PD2...")
```

41-3

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the document size sensor and the related circuit. (The document size sensor output level can be monitored with the LCD display.)
Section	Other
Item	Operation

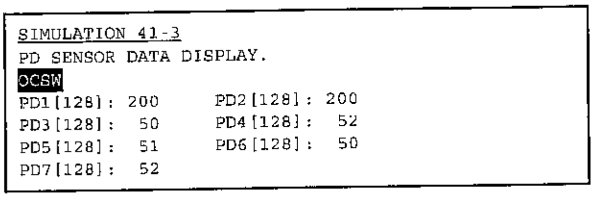
Operation/Procedure

The detection output level (A/D value) of the document sensors (PD1 - PD7) is displayed in real time.

* The value in [ ] on the side of each sensor name indicates the threshold value.

The light receiving value (A/D value) and the threshold value (A/D value) of PD1 - PD7 are in the range of 1 - 255. The default of threshold value is 128.

OCSW	Original cover status	Open: Normal display
		Close: Highlighted
PD1 - 7	PD sensor detection level The value in [ ] indicates the adjustment threshold value (SIM41-2 adjustment value).	



```
SIMULATION 41-3
PD SENSOR DATA DISPLAY.
OCSW
PD1[128]: 200     PD2[128]: 200
PD3[128]:  50     PD4[128]:  52
PD5[128]:  51     PD6[128]:  50
PD7[128]:  52
```

43

43-1

Purpose	Setting
Function (Purpose)	Used to set the fusing temperature in each operation mode.
Section	Fixing (Fusing)
Item	Operation

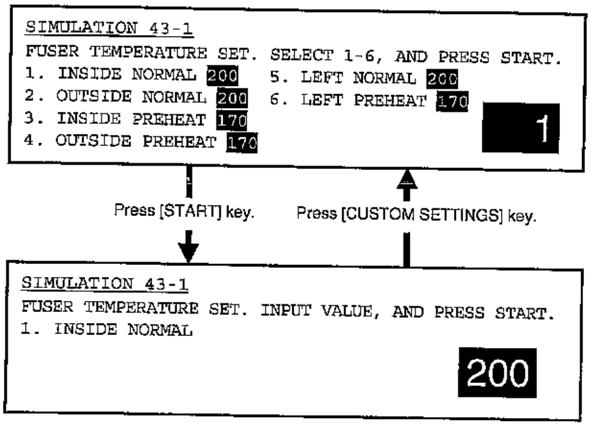
Operation/Procedure

1) Select the number corresponding to the setting mode with 10-key.
2) Press [START] key.
3) Press [CUSTOM SETTINGS] key.

▲: Feb. 9 2004

4) Press [START] key.

Item			Japan	Inch series	AB series
1	INSIDE NORMAL	Fusing roller inside/ normal mode	185	200	205
2	OUTSIDE NORMAL	Fusing roller outside/ normal mode	185	200	205
3	INSIDE PREHEAT	Fusing roller inside/ preheat mode	140	170	170
4	OUTSIDE PREHEAT	Fusing roller outside/ preheat mode	140	170	170
5	LEFT NORMAL	Sub-heat roller/ normal mode	185	200	205
6	LEFT PREHEAT	Sub-heat roller/ preheat mode	140	170	170



```
SIMULATION 43-1
FUSER TEMPERATURE SET. SELECT 1-6, AND PRESS START.
1. INSIDE NORMAL 200     5. LEFT NORMAL 200
2. OUTSIDE NORMAL 200    6. LEFT PREHEAT 170
3. INSIDE PREHEAT 170
4. OUTSIDE PREHEAT 170                        1
```

```
SIMULATION 43-1
FUSER TEMPERATURE SET. INPUT VALUE, AND PRESS START.
1. INSIDE NORMAL
                                            200
```

43-3

Purpose	Setting (Adjustment)
Function (Purpose)	Fusing roller RPM setting.
Section	Fixing (Fusing)
Item	Operation

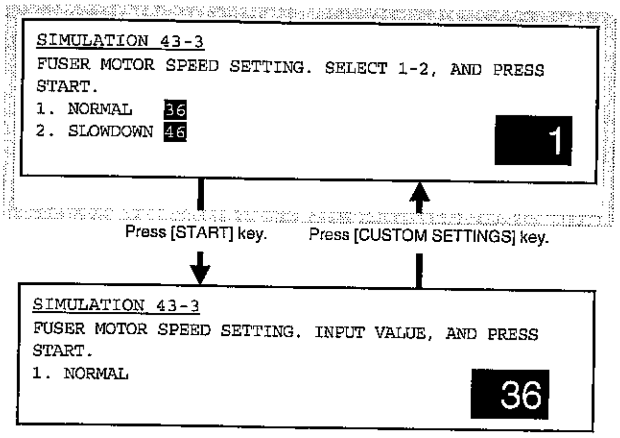
Operation/Procedure

1) Select the number corresponding to the adjustment item with 10-key.
2) Press [START] key.
3) Enter the setting (adjustment) value with 10-key.
4) Press [START] key.

Unless special measures are required, do not change the setting values below.

Item		Set range	Default	
			AR-M550N/U, AR-M620N/U	AR-M700N/U
1	NORMAL	0 – 99	36	35
2	SLOWDOWN	0 – 99	46	44

▲



```
SIMULATION 43-3
FUSER MOTOR SPEED SETTING. SELECT 1-2, AND PRESS
START.
1. NORMAL    36
2. SLOWDOWN  46
                                          1
```

```
SIMULATION 43-3
FUSER MOTOR SPEED SETTING. INPUT VALUE, AND PRESS
START.
1. NORMAL
                                         36
```

44

44-1

Purpose	Setting
Function (Purpose)	Used to set enable/disable of correction operations in the image forming (process) section.
Section	Image process (Photoconductor/Developing/Transfer/ Cleaning)
Item	Operation

Operation/Procedure

▲ 1) Each bit (7 kinds) is assigned to each correction item to set ENABLE/DISABLE of the operation.
Each bit is assigned with 0 or 1 value. Enter the total values of items which are desired to be valid with the 10-key.

2) Press [START] key.

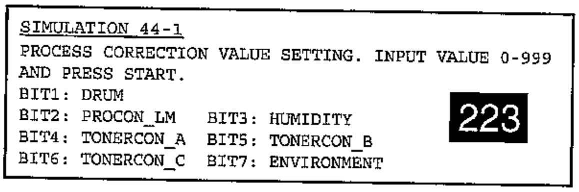
Item			Default
BIT1	OPC drum membrane decrease (sensitivity/ potential) correction	Laser power/main charger grid voltage	1
BIT2	The range of the toner patch making voltage in the developing bias voltage/main charger grid voltage correction is specified. (Voltage limit)	Developing bias/main grid voltage (adjusted by SIM 8-1 and 8-2) ±100v	1
BIT3	For humidity correction	Toner concentration correction	1
BIT4	Toner concentration correction	When the developing bias/main charger grid voltage correction is changed more than the specified level, the toner concentration control level is corrected.	1
BIT5	Toner concentration correction B	Correction for the developer life	0
BIT6	Toner concentration correction C	Toner concentration correction in low density image continuous print	1
BIT7	OPC drum for environment correction		1

NOTE: Set to 222.

When bit=1, correction is made.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	0	0	0	0	0	0	0	0	Env	Tcon_C	Tcon_B	Tcon_A	Humidity	Pcon_lm	Drum

NOTE: BIT0 is not displayed, but set to the developing bias correction function.
This setting is forcibly made enable, and cannot be disabled.



```
SIMULATION 44-1
PROCESS CORRECTION VALUE SETTING. INPUT VALUE 0-999
AND PRESS START.
BIT1: DRUM
BIT2: PROCON_LM    BIT3: HUMIDITY              223
BIT4: TONERCON_A   BIT5: TONERCON_B
BIT6: TONERCON_C   BIT7: ENVIRONMENT
```

▲: Feb. 9 2004

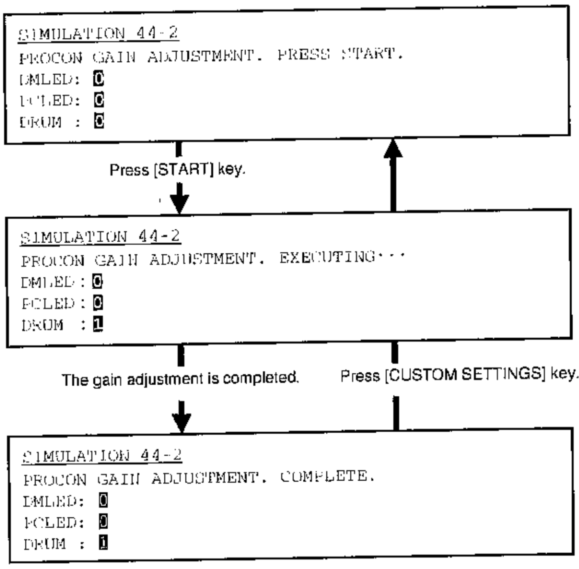
44-2

Purpose	Adjustment
Function (Purpose)	Used to perform the gain adjustment (image density sensor LED current adjustment) of the image density sensor and the gain adjustment (OPC drum marking sensor LED current adjustment) of the OPC drum marking sensor.
Section	Image process (Photoconductor)
Item	Operation

Operation/Procedure

Press [START] key, and the adjustment is automatically performed. When the adjustment is completed, the adjustment result is displayed. If the adjustment is not completed normally, "ERROR" is displayed. When an error occurs, the adjustment result is not revised.

DMLED	Drum marking sensor gain adjustment
PCLED	Image density sensor gain adjustment value
DRUM	Kind of the drum 0 = Other 1 = SHARP drum



```
SIMULATION 44-2
PROCON GAIN ADJUSTMENT. PRESS START.
DMLED: 0
PCLED: 0
DRUM : 0
```

```
SIMULATION 44-2
PROCON GAIN ADJUSTMENT. EXECUTING···
DMLED : 0
PCLED : 0
DRUM  : 1
```

```
SIMULATION 44-2
PROCON GAIN ADJUSTMENT. COMPLETE.
DMLED: 0
PCLED: 0
DRUM : 1
```

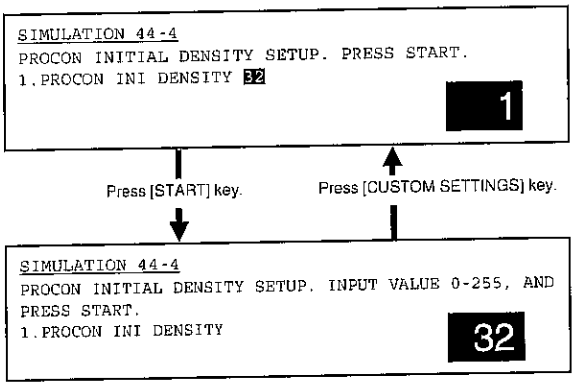
Press [START] key.
The gain adjustment is completed.
Press [CUSTOM SETTINGS] key.

44-4

Purpose	Setting
Function (Purpose)	Used to set the target density level in the image density correction.
Section	Image process (Photoconductor/Developing)
Item	Operation

Operation/Procedure

1) Enter the target density level in the image density correction with 10-key.
2) Press [START] key.



```
SIMULATION 44-4
PROCON INITIAL DENSITY SETUP. PRESS START.
1.PROCON INI DENSITY 32
                                        1
```

```
SIMULATION 44-4
PROCON INITIAL DENSITY SETUP. INPUT VALUE 0-255, AND
PRESS START.
1.PROCON INI DENSITY                   32
```

44-5

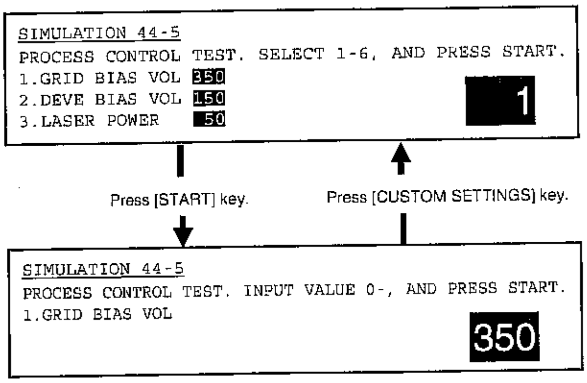
Purpose	Setting
Function (Purpose)	Used to set the reference developing bias voltage, the reference main charger grid voltage, and the laser power in the image density correction.
Section	Image process (Photoconductor/Developing)
Item	Operation

Operation/Procedure

1) Select the number corresponding to the setting mode with 10-key.
2) Press [START] key.
3) Enter the set value.
4) Press [START] key.

Item			Default
1	GRID BIAS VOL	Main charger voltage for developing bias voltage correction	350
▲ 2	DEVE BIAS VOL	Reference developing bias voltage for developing bias voltage correction	150
3	LASER POWER	Reference laser power for developing bias voltage correction	50

▲



```
SIMULATION 44-5
PROCESS CONTROL TEST. SELECT 1-6, AND PRESS START.
1.GRID BIAS VOL 350
2.DEVE BIAS VOL 150                       1
3.LASER POWER    50
```

```
SIMULATION 44-5
PROCESS CONTROL TEST. INPUT VALUE 0-, AND PRESS START.
1.GRID BIAS VOL
                                        350
```

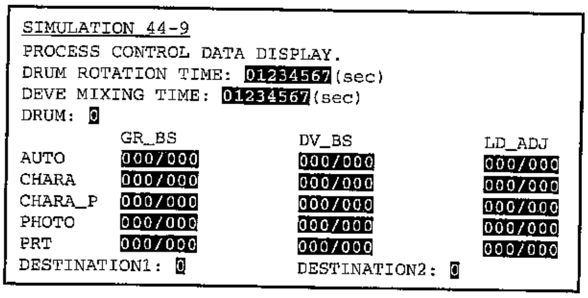
44-9

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)	
Function (Purpose)	Used to check the data related to the image forming section correction (process correction) result (corrected main charger grid voltage, the developing bias voltage, and the laser power voltage in each print mode). (This simulation allows to check that correction is performed normally or not.)	
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)	
Item	Data	Operation data (Machine condition)

Operation/Procedure

Item		NOTE
▲ DRUM ROTATION TIME	OPC drum rotation time (sec)	Reset by SIM 24-11.
▲ DEVE MIXING TIME	Developing roller rotation time (sec)	Reset by SIM 24-11.
DRUM	OPC drum identification code	1: For AR620/550/625/555 0: For other than AR620/550/625/555
GR BS	Actual main charger grid voltage (including correction) / Main charger grid voltage adjusted with SIM 8-2	
DV BS	Actual developing bias voltage (including correction) / Developing bias voltage adjusted with SIM 8-1	

Item		NOTE
LD ADJ	Actual laser power beam (Including correction)	
AUTO	Auto copy mode	
CHARA	Text copy mode	
CHARA P	Text/Photo copy mode	
PHOTO	Photo copy mode	
PRT	Printer mode	
DESTINATION 1	Toner destination code stored in the main unit	
DESTINATION 2	Toner destination code stored in the toner bottle CRUM chip	



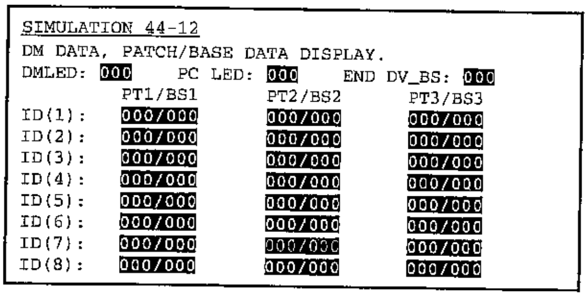
```
SIMULATION 44-9
PROCESS CONTROL DATA DISPLAY.
DRUM ROTATION TIME: 01234567(sec)
DEVE MIXING TIME: 01234567(sec)
DRUM: 0
            GR_BS                 DV_BS                 LD_ADJ
AUTO        000/000               000/000               000/000
CHARA       000/000               000/000               000/000
CHARA_P     000/000               000/000               000/000
PHOTO       000/000               000/000               000/000
PRT         000/000               000/000               000/000
DESTINATION1: 0                   DESTINATION2: 0
```

44-12

Purpose	Adjustment/Setup/Operation data output/Check (Display)
Function (Purpose)	Used to display sampling toner image patch density data in image density correction. (Used to check that the correction is performed normally or not.)
Section	Image process (Photoconductor/Developing)
Item	Operation

Operation/Procedure

DMLED	OPC drum marking sensor LED current adjustment value
PC LED	OPC drum marking sensor LED current adjustment value
END DV BS	Developing bias voltage when making PT2/BS2 of ID (1)
ID (n)	Indicates the toner patch making procedures.
PT1/BS1	Toner patch density detection level/OPC drum surface detection level when the developing bias is 0V - 50V.
PT2/BS2	Toner patch density detection level/OPC drum surface detection level when the developing bias is 0V.
PT3/BS3	Toner patch density detection level/OPC drum surface detection level when the developing bias is 0V + 50V.



```
SIMULATION 44-12
DM DATA, PATCH/BASE DATA DISPLAY.
DMLED: 000      PC LED: 000      END DV_BS: 000
         PT1/BS1        PT2/BS2        PT3/BS3
ID(1):   000/000        000/000        000/000
ID(2):   000/000        000/000        000/000
ID(3):   000/000        000/000        000/000
ID(4):   000/000        000/000        000/000
ID(5):   000/000        000/000        000/000
ID(6):   000/000        000/000        000/000
ID(7):   000/000        000/000        000/000
ID(8):   000/000        000/000        000/000
```

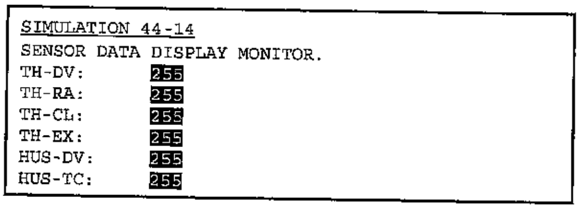
44-14

Purpose	Adjustment/Setup/Operation data output/Check (Display)
Function (Purpose)	Used to check the output level of the temperature sensor and the humidity sensor.
Section	Image process (Photoconductor/Developing)
Item	Operation

Operation/Procedure

The output levels of the temperature sensor and the humidity sensor in the developing unit are displayed.

TH-DV (Not used)	Developing section temperature sensor	0 - 255
TH-RA (Not used)	Room temperature sensor	0 - 255
TH-CL	Process section temperature sensor	0 - 255
TH-EX	Paper discharging section temperature sensor	0 - 255
HUS-DV	Developing section humidity sensor	0 - 255
HUS-TC (Not used)	Process section humidity sensor	0 - 255



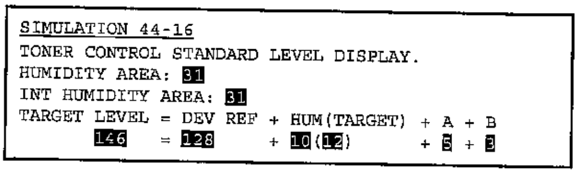
```
SIMULATION 44-14
SENSOR DATA DISPLAY MONITOR.
TH-DV:     255
TH-RA:     255
TH-CL:     255
TH-EX:     255
HUS-DV:    255
HUS-TC:    255
```

44-16

Purpose	Adjustment/Setup/Operation data output/Check (Display)
Function (Purpose)	Used to check the toner concentration control data.
Section	Image process (Developing)
Item	Operation

Operation/Procedure

HUMIDITY AREA	Humidity area
INT HUMIDITY AREA	Humidity area when setting the toner concentration control level (SIM 25-2)
TARGET LEVEL	Current toner concentration control level
▲ DEV REF	Toner concentration when setting the toner concentration control level (SIM 25-2)
HUMIDITY (TARGET)	Toner concentration correction value for humidity
A	Toner concentration correction value for change in developing bias voltage
B	Toner concentration value for developer life



```
SIMULATION 44-16
TONER CONTROL STANDARD LEVEL DISPLAY.
HUMIDITY AREA: 31
INT HUMIDITY AREA: 31
TARGET LEVEL = DEV REF + HUM(TARGET)  + A + B
       146   = 128     + 10(12)       + 5 + 3
```

46

46-2

Purpose	Adjustment	
Function (Purpose)	Used to adjust the copy density in all the copy modes (Auto, Text, Text/Photo, and Photo mode).	
Section		
Item	Picture quality	Density

Operation/Procedure

1) Select the number corresponding to the copy mode to be adjusted with 10-key. (Select one of 3 - 6.)
2) Press [START] key.
3) Enter the copy density level with 10-key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		
3	AE 3.0	AE mode	0 - 99	50
4	CH 3.0	Text mode 3.0		
5	MIX 3.0	Text/Photo mode 3.0		
6	PHOTO 3.0	Photo mode 3.0		

4) Press P key or [START] key.

The adjustment value is set.

When [START] key is pressed, copying is performed and the adjustment value is simultaneously set.

Check the density of the printed copy image.

Normal display		NOW COPYING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

NOTE: When the copy image density is adjusted with this simulation, the copy image densities of all the copy modes are changed to the copy image density level set with this simulation.

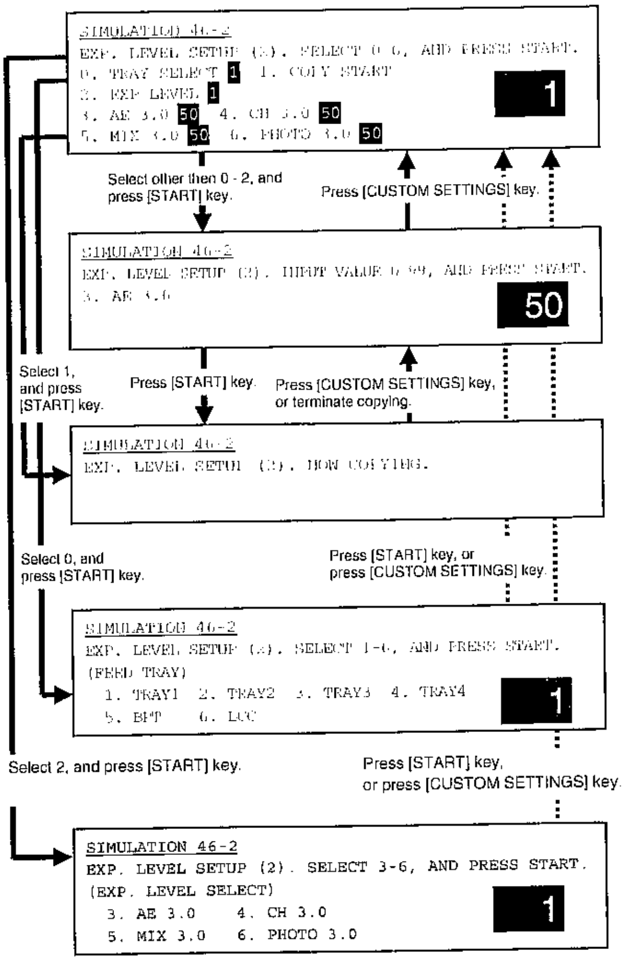
That is, the copy image density of each copy mode set with SIM 46-9, 10, 11 is changed to the copy image density level adjusted with this simulation.

To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.


SIMULATION 46-2
EXP. LEVEL SETUP (2). SELECT 0-6, AND PRESS START.
0. TRAY SELECT 1 1. COPY START
2. EXP LEVEL 1
3. AE 3.0 50 4. CH 3.0 50
5. MIX 3.0 50 6. PHOTO 3.0 50
1
Select other then 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
SIMULATION 46-2
EXP. LEVEL SETUP (2). INPUT VALUE 0-99, AND PRESS START.
3. AE 3.0
50
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
SIMULATION 46-2
EXP. LEVEL SETUP (2). NOW COPYING.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
SIMULATION 46-2
EXP. LEVEL SETUP (2). SELECT 1-6, AND PRESS START.
(FEED TRAY)
1. TRAY1 2. TRAY2 3. TRAY3 4. TRAY4
5. BPT 6. LCC
1
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
SIMULATION 46-2
EXP. LEVEL SETUP (2). SELECT 3-6, AND PRESS START.
(EXP. LEVEL SELECT)
3. AE 3.0 4. CH 3.0
5. MIX 3.0 6. PHOTO 3.0
1

46-9

Purpose	Adjustment
Function (Purpose)	Used to adjust the print density for each density level (display value) in the copy mode (binary - Text mode). An optional print density can be set for each density level (display value).
Section	
Item	Picture quality Density

Operation/Procedure

1) Select the number corresponding to the copy density adjustment level with 10-key. (Select one of 3 - 11.)
2) Press [START] key.
3) Enter the copy density level with 10-key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		
3	1.0	Exposure level 1.0	0 - 99	50
4	1.5	Exposure level 1.5		
5	2.0	Exposure level 2.0		
6	2.5	Exposure level 2.5		
7	3.0	Exposure level 3.0		
8	3.5	Exposure level 3.5		
9	4.0	Exposure level 4.0		
10	4.5	Exposure level 4.5		
11	5.0	Exposure level 5.0		

4) Press [P] key or [START] key.

The adjustment value is set.

When [START] key is pressed, copying is perfumed and the adjustment value is set simultaneously.

Check the density of printed copy image.

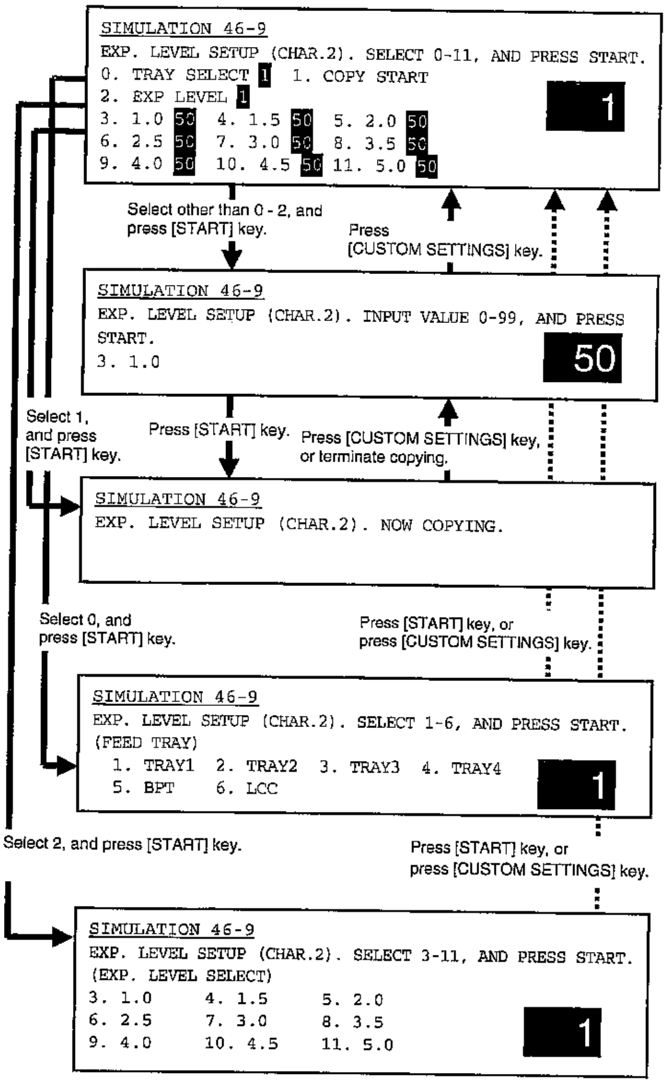
Normal display		NOW COPYING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



```
SIMULATION 46-9
EXP. LEVEL SETUP (CHAR.2). SELECT 0-11, AND PRESS START.
0. TRAY SELECT 1  1. COPY START
2. EXP LEVEL 1
3. 1.0 50   4. 1.5 50   5. 2.0 50
6. 2.5 50   7. 3.0 50   8. 3.5 50
9. 4.0 50   10. 4.5 50  11. 5.0 50
                                        1
```

```
SIMULATION 46-9
EXP. LEVEL SETUP (CHAR.2). INPUT VALUE 0-99, AND PRESS
START.
3. 1.0                                  50
```

```
SIMULATION 46-9
EXP. LEVEL SETUP (CHAR.2). NOW COPYING.
```

```
SIMULATION 46-9
EXP. LEVEL SETUP (CHAR.2). SELECT 1-6, AND PRESS START.
(FEED TRAY)
  1. TRAY1   2. TRAY2   3. TRAY3   4. TRAY4
  5. BPT     6. LCC                     1
```

```
SIMULATION 46-9
EXP. LEVEL SETUP (CHAR.2). SELECT 3-11, AND PRESS START.
(EXP. LEVEL SELECT)
3. 1.0     4. 1.5     5. 2.0
6. 2.5     7. 3.0     8. 3.5
9. 4.0     10. 4.5    11. 5.0           1
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

46-10

Purpose	Adjustment
Function (Purpose)	Used to adjust the print density for each density level (display value) in the copy mode (binary - Text/Photo mode). An optional print density can be set for each density level (display value).
Section	
Item	Picture quality

Operation/Procedure

1) Select the number corresponding to the copy density adjustment level with 10-key. (Select one of 3 - 11.)
2) Press [START] key.
3) Enter the copy density level with 10-key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		
3	1.0	Exposure level 1.0	0 - 99	50
4	1.5	Exposure level 1.5		
5	2.0	Exposure level 2.0		
6	2.5	Exposure level 2.5		
7	3.0	Exposure level 3.0		
8	3.5	Exposure level 3.5		
9	4.0	Exposure level 4.0		
10	4.5	Exposure level 4.5		
11	5.0	Exposure level 5.0		

4) Press [P] key or [START] key.

The adjustment value is set.

When [START] key is pressed, copying is perfumed and the adjustment value is set simultaneously.

Check the density of printed copy image.

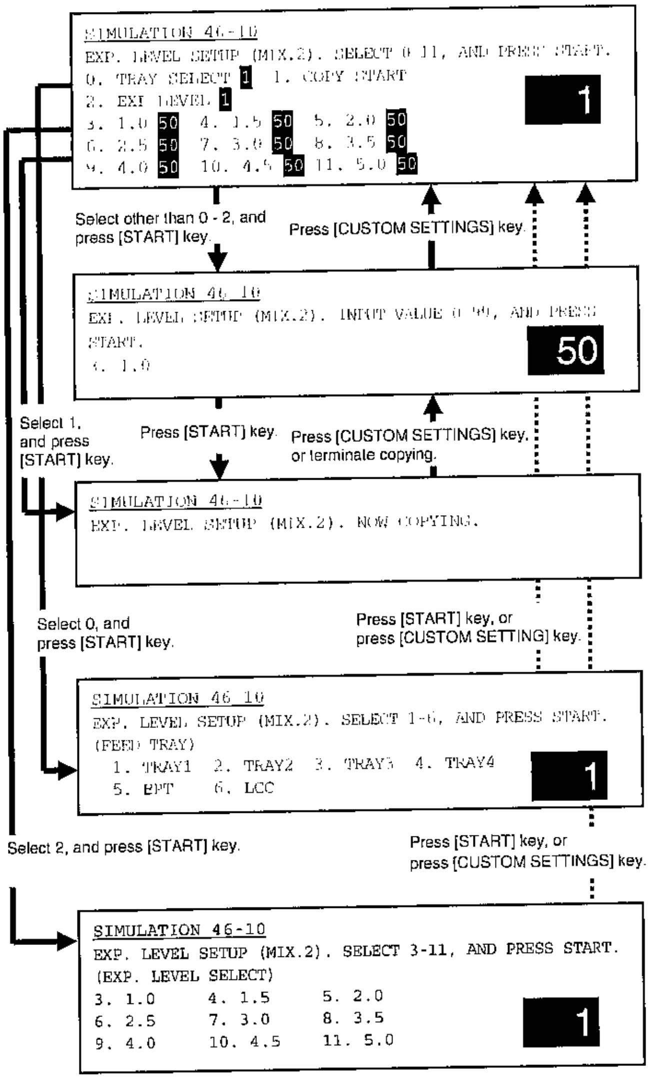
Normal display		NOW COPYING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



```
SIMULATION 46-10
EXP. LEVEL SETUP (MIX.2). SELECT 0-11, AND PRESS START.
0. TRAY SELECT 1  1. COPY START                           1
2. EXP LEVEL 1
3. 1.0 50   4. 1.5 50   5. 2.0 50
6. 2.5 50   7. 3.0 50   8. 3.5 50
9. 4.0 50   10. 4.5 50  11. 5.0 50
```

```
SIMULATION 46-10
EXP. LEVEL SETUP (MIX.2). INPUT VALUE 0-99, AND PRESS
START.                                                   50
3. 1.0
```

```
SIMULATION 46-10
EXP. LEVEL SETUP (MIX.2). NOW COPYING.
```

```
SIMULATION 46-10
EXP. LEVEL SETUP (MIX.2). SELECT 1-6, AND PRESS START.
(FEED TRAY)
 1. TRAY1  2. TRAY2  3. TRAY3  4. TRAY4                   1
 5. BPT    6. LCC
```

```
SIMULATION 46-10
EXP. LEVEL SETUP (MIX.2). SELECT 3-11, AND PRESS START.
(EXP. LEVEL SELECT)
3. 1.0    4. 1.5    5. 2.0
6. 2.5    7. 3.0    8. 3.5                                1
9. 4.0    10. 4.5   11. 5.0
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTING] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

46-11

Purpose	Adjustment
Function (Purpose)	Used to adjust the print density for each density level (display value) in the copy mode (binary - Photo mode). An optional print density can be set for each density level (display value).
Section	
Item	Picture quality Density

Operation/Procedure

1) Select the number corresponding to the copy density adjustment level with 10-key. (Select one of 3 - 11.)
2) Press [START] key.
3) Enter the copy density level with 10-key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		
3	1.0	Exposure level 1.0	0 - 99	50
4	1.5	Exposure level 1.5		
5	2.0	Exposure level 2.0		
6	2.5	Exposure level 2.5		
7	3.0	Exposure level 3.0		
8	3.5	Exposure level 3.5		
9	4.0	Exposure level 4.0		
10	4.5	Exposure level 4.5		
11	5.0	Exposure level 5.0		

4) Press [P] key or [START] key.

The adjustment value is set.

When [START] key is pressed, copying is perfumed and the adjustment value is set simultaneously.

Check the density of printed copy image.

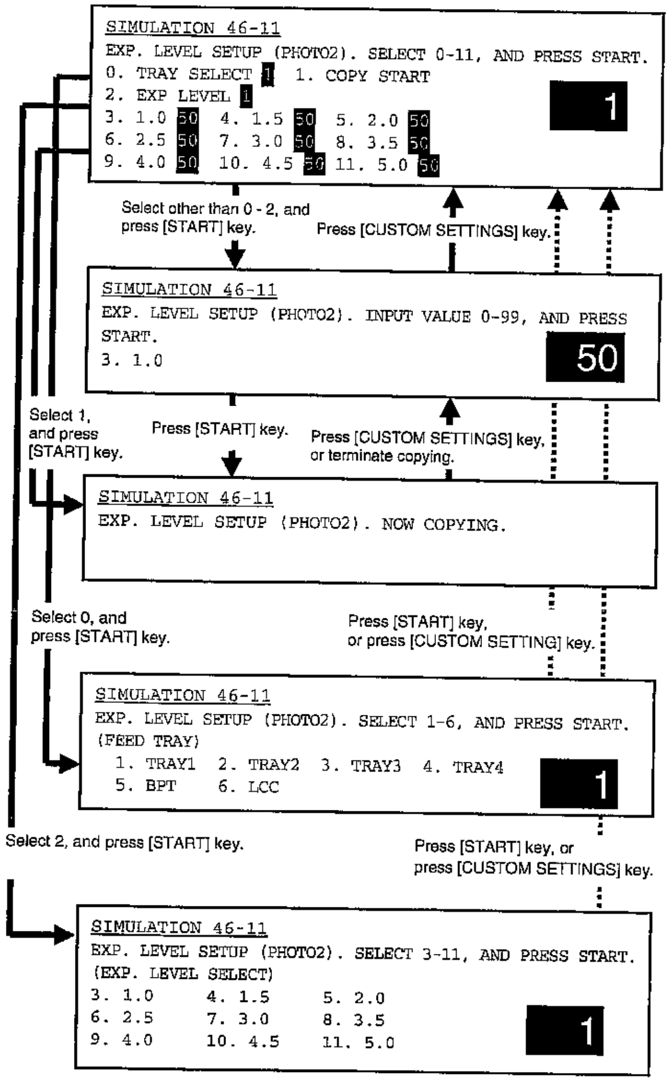
Normal display		NOW COPYING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.


Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTING] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

```
SIMULATION 46-11
EXP. LEVEL SETUP (PHOTO2). SELECT 0-11, AND PRESS START.
0. TRAY SELECT 1  1. COPY START
2. EXP LEVEL 1
3. 1.0 50  4. 1.5 50  5. 2.0 50
6. 2.5 50  7. 3.0 50  8. 3.5 50
9. 4.0 50  10. 4.5 50  11. 5.0 50
                                        1
```

```
SIMULATION 46-11
EXP. LEVEL SETUP (PHOTO2). INPUT VALUE 0-99, AND PRESS
START.
3. 1.0                                  50
```

```
SIMULATION 46-11
EXP. LEVEL SETUP (PHOTO2). NOW COPYING.
```

```
SIMULATION 46-11
EXP. LEVEL SETUP (PHOTO2). SELECT 1-6, AND PRESS START.
(FEED TRAY)
 1. TRAY1  2. TRAY2  3. TRAY3  4. TRAY4
 5. BPT    6. LCC                       1
```

```
SIMULATION 46-11
EXP. LEVEL SETUP (PHOTO2). SELECT 3-11, AND PRESS START.
(EXP. LEVEL SELECT)
3. 1.0     4. 1.5     5. 2.0
6. 2.5     7. 3.0     8. 3.5
9. 4.0     10. 4.5    11. 5.0           1
```

46-12

Purpose	Adjustment
Function (Purpose)	Used to adjust the print density in the FAX mode (all modes).
Section	
Item	Picture quality

Operation/Procedure

1) Select the adjustment item of FAX EXP. LEVEL with 10-key.
2) Press [START] key.
3) Enter the print density level with 10-key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	COPY START	Copy START (Default)		
2	FAX EXP. LEVEL	FAX mode print density	0 - 99	50

4) Press [P] key or [START] key.

   The adjustment value is set.

   When [START] key is pressed, printing is perfumed and the adjustment value is set simultaneously.

   Check the density of printed image.

Normal display		NOW PRINTING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

NOTE: When the FAX print image density is adjusted with this simulation, the print image densities of all the FAX modes are changed to the image density level set with this simulation.

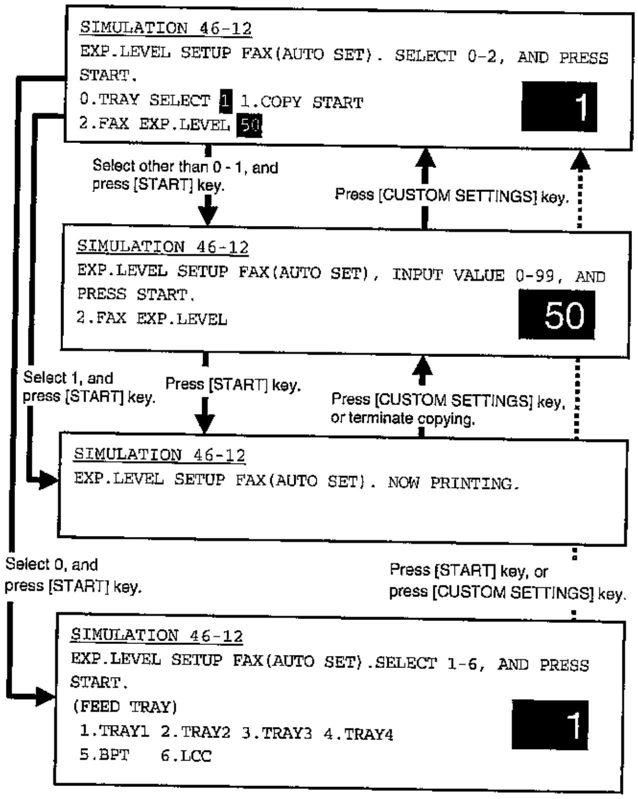
That is, the print image density of each FAX mode set with SIM 46-13, 14, 15 is changed to the print image density level adjusted with this simulation.

To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.


Select other than 0 - 1, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

```
SIMULATION 46-12
EXP.LEVEL SETUP FAX(AUTO SET). SELECT 0-2, AND PRESS
START.
0.TRAY SELECT 1 1.COPY START
2.FAX EXP.LEVEL 50                      1
```

```
SIMULATION 46-12
EXP.LEVEL SETUP FAX(AUTO SET), INPUT VALUE 0-99, AND
PRESS START.
2.FAX EXP.LEVEL                         50
```

```
SIMULATION 46-12
EXP.LEVEL SETUP FAX(AUTO SET). NOW PRINTING.
```

```
SIMULATION 46-12
EXP.LEVEL SETUP FAX(AUTO SET).SELECT 1-6, AND PRESS
START.
(FEED TRAY)
 1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
 5.BPT   6.LCC                          1
```

46-13

Purpose	Adjustment
Function (Purpose)	Used to adjust the print density in the FAX mode (each normal mode). (Only when FAX is installed.)
Section	
Item	Picture quality

Operation/Procedure

1) Select the number corresponding to one of the following adjustment items with 10-key.
   - ✻ Manual mode (Print density adjustment level)
   - ✻ Auto mode
2) Press [START] key.
3) Enter the print density level with 10-key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	AUTO	Auto	0 - 99	50
4	1.0	Exposure level 1		
5	2.0	Exposure level 2		
6	3.0	Exposure level 3		
7	4.0	Exposure level 4		
8	5.0	Exposure level 5		

4) Press [P] key or [START] key.

   The adjustment value is set.

   When [START] key is pressed, printing is perfumed and the adjustment value is set simultaneously.

   Check the density of printed image.

Normal display		NOW PRINTING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

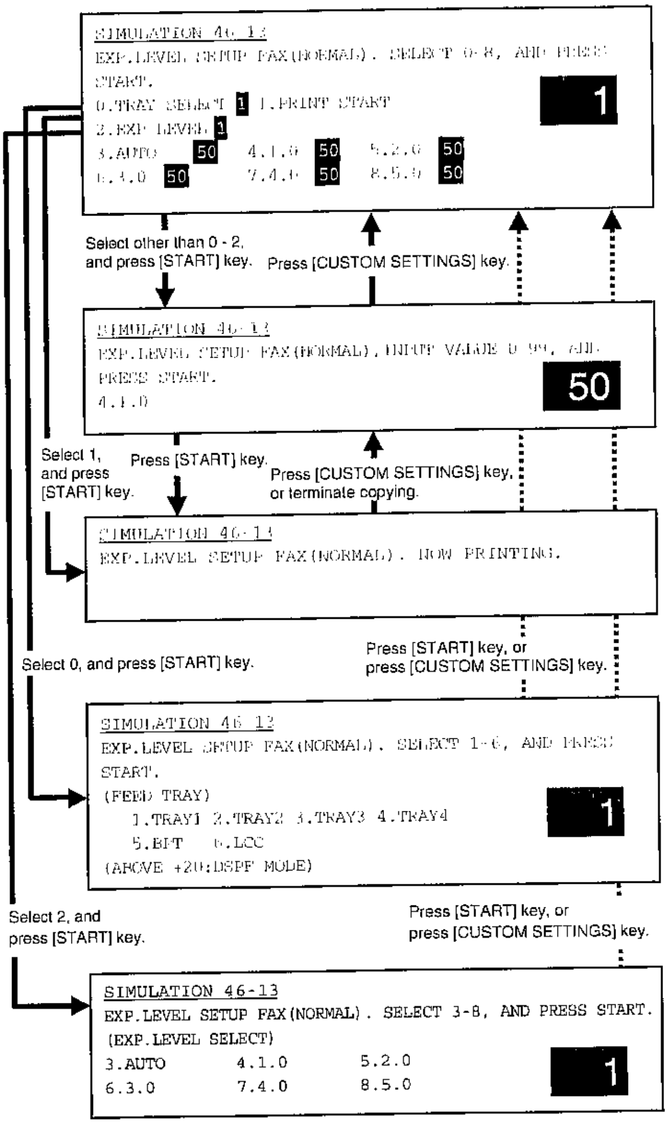
To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

When the sum of the above set value (1 - 6) and 20 is set, the mode is changed to the duplex print mode.

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



```
SIMULATION 46-13
EXP.LEVEL SETUP FAX(NORMAL). SELECT 0-8, AND PRESS
START.
0.TRAY SELECT 1  1.PRINT START                  1
2.EXP LEVEL 1
3.AUTO     50   4.1.0  50   5.2.0  50
6.3.0  50       7.4.0  50   8.5.0  50
```

```
SIMULATION 46-13
EXP.LEVEL SETUP FAX(NORMAL). INPUT VALUE 0-99, AND
PRESS START.                                   50
4.1.0
```

```
SIMULATION 46-13
EXP.LEVEL SETUP FAX(NORMAL). NOW PRINTING.
```

```
SIMULATION 46-12
EXP.LEVEL SETUP FAX(NORMAL). SELECT 1-6, AND PRESS
START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4              1
   5.BPT   6.LCC
(ABOVE +20:DSPF MODE)
```

```
SIMULATION 46-13
EXP.LEVEL SETUP FAX(NORMAL). SELECT 3-8, AND PRESS START.
(EXP.LEVEL SELECT)
3.AUTO       4.1.0       5.2.0
6.3.0        7.4.0       8.5.0                    1
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

46-14

Purpose	Adjustment
Function (Purpose)	Used to adjust the print density in the FAX mode (each fine mode). (Only when FAX is installed.)
Section	
Item	Picture quality

Operation/Procedure

1) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 3 - 14.)
   - ✻ Normal mode (Print density adjustment level)
   - ✻ Normal mode (Print density adjustment level) (Half-tone mode)
   - ✻ Auto mode
   - ✻ Auto mode (Half-tone mode)

2) Enter the print density level with 10-key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	AUTO	Auto	0 - 99	50
4	1.0	Exposure level 1		
5	2.0	Exposure level 2		
6	3.0	Exposure level 3		
7	4.0	Exposure level 4		
8	5.0	Exposure level 5		
9	AUTO (H)	Auto (Half-tone)		
10	1.0 (H)	Exposure level 1 (Half-tone)		
11	2.0 (H)	Exposure level 2 (Half-tone)		
12	3.0 (H)	Exposure level 3 (Half-tone)		
13	4.0 (H)	Exposure level 4 (Half-tone)		
14	5.0 (H)	Exposure level 5 (Half-tone)		

3) Press [P] key or [ATART] key.

The entered value is set.

When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.

Check the density of print image.

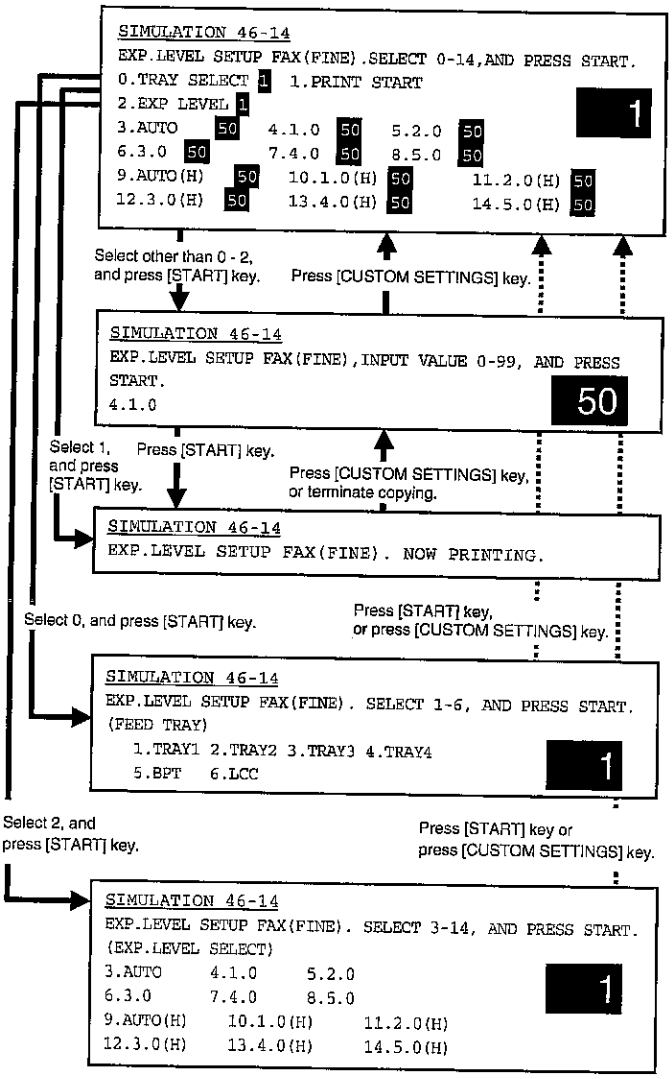
Normal display		NOW PRINTING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



```
SIMULATION 46-14
EXP.LEVEL SETUP FAX(FINE).SELECT 0-14,AND PRESS START.
0.TRAY SELECT 1  1.PRINT START
2.EXP LEVEL 1                                          1
3.AUTO     50   4.1.0 50   5.2.0 50
6.3.0  50       7.4.0 50   8.5.0 50
9.AUTO(H)   50   10.1.0(H) 50     11.2.0(H) 50
12.3.0(H)  50    13.4.0(H) 50     14.5.0(H) 50
```

```
SIMULATION 46-14
EXP.LEVEL SETUP FAX(FINE),INPUT VALUE 0-99, AND PRESS
START.
4.1.0                                                 50
```

```
SIMULATION 46-14
EXP.LEVEL SETUP FAX(FINE). NOW PRINTING.
```

```
SIMULATION 46-14
EXP.LEVEL SETUP FAX(FINE). SELECT 1-6, AND PRESS START.
(FEED TRAY)
  1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
  5.BPT   6.LCC                                        1
```

```
SIMULATION 46-14
EXP.LEVEL SETUP FAX(FINE). SELECT 3-14, AND PRESS START.
(EXP.LEVEL SELECT)
3.AUTO     4.1.0     5.2.0                             1
6.3.0      7.4.0     8.5.0
9.AUTO(H)    10.1.0(H)    11.2.0(H)
12.3.0(H)    13.4.0(H)    14.5.0(H)
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.

46-15

Purpose	Adjustment
Function (Purpose)	Used to adjust the print density in the FAX mode (each super fine mode). (Only when FAX is installed.)
Section	
Item	Picture quality

Operation/Procedure

1) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 3 - 14.)
   - * Normal mode (Print density adjustment level)
   - * Normal mode (Print density adjustment level) (Half-tone mode)
   - * Auto mode
   - * Auto mode (Half-tone mode)
2) Press [START] key.

3) Enter the print density level with 10-key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	AUTO	Auto	0 - 99	50
4	1.0	Exposure level 1		
5	2.0	Exposure level 2		
6	3.0	Exposure level 3		
7	4.0	Exposure level 4		
8	5.0	Exposure level 5		
9	AUTO (H)	Auto (Half-tone)		
10	1.0 (H)	Exposure level 1 (Half-tone)		
11	2.0 (H)	Exposure level 2 (Half-tone)		
12	3.0 (H)	Exposure level 3 (Half-tone)		
13	4.0 (H)	Exposure level 4 (Half-tone)		
14	5.0 (H)	Exposure level 5 (Half-tone)		

4) Press [P] key or [START] key.

The entered value is set.

When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.

Check the density of print image.

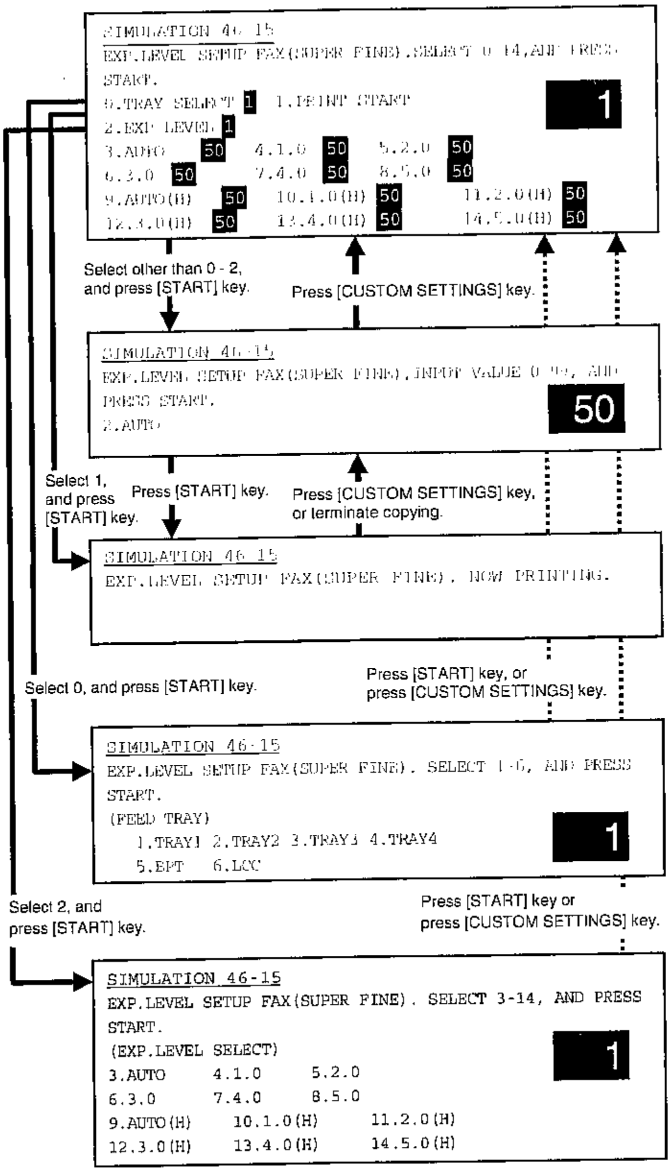
Normal display		NOW PRINTING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



```
SIMULATION 46-15
EXP.LEVEL SETUP FAX(SUPER FINE).SELECT 0-14,AND PRESS
START.
0.TRAY SELECT 1    1.PRINT START                    1
2.EXP LEVEL 1
3.AUTO       50   4.1.0   50   5.2.0   50
6.3.0   50        7.4.0   50   8.5.0   50
9.AUTO(H)    50   10.1.0(H) 50      11.2.0(H) 50
12.3.0(H)   50    13.4.0(H) 50      14.5.0(H) 50
```

```
SIMULATION 46-15
EXP.LEVEL SETUP FAX(SUPER FINE),INPUT VALUE 0-99, AND
PRESS START.                                        50
3.AUTO
```

```
SIMULATION 46-15
EXP.LEVEL SETUP FAX(SUPER FINE). NOW PRINTING.
```

```
SIMULATION 46-15
EXP.LEVEL SETUP FAX(SUPER FINE). SELECT 1-6, AND PRESS
START.
(FEED TRAY)
   1.TRAY1  2.TRAY2  3.TRAY3  4.TRAY4              1
   5.BPT    6.LCC
```

```
SIMULATION 46-15
EXP.LEVEL SETUP FAX(SUPER FINE). SELECT 3-14, AND PRESS
START.
(EXP.LEVEL SELECT)
3.AUTO      4.1.0      5.2.0                        1
6.3.0       7.4.0      8.5.0
9.AUTO(H)     10.1.0(H)      11.2.0(H)
12.3.0(H)     13.4.0(H)      14.5.0(H)
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.

46-16

Purpose	Adjustment
Function (Purpose)	Used to adjust the print density in the FAX mode (each ultra fine mode). (Only when FAX is installed.)
Section	
Item	Picture quality

Operation/Procedure

1) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 3 - 14.)
   - * Normal mode (Print density adjustment level)
   - * Normal mode (Print density adjustment level) (Half-tone mode)
   - * Auto mode
   - * Auto mode (Half-tone mode)
2) Press [START] key.
3) Enter the print density level with 10-key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	AUTO	Auto	0 - 99	50
4	1.0	Exposure level 1		
5	2.0	Exposure level 2		
6	3.0	Exposure level 3		
7	4.0	Exposure level 4		
8	5.0	Exposure level 5		
9	AUTO (H)	Auto (Half-tone)		
10	1.0 (H)	Exposure level 1 (Half-tone)		
11	2.0 (H)	Exposure level 2 (Half-tone)		
12	3.0 (H)	Exposure level 3 (Half-tone)		
13	4.0 (H)	Exposure level 4 (Half-tone)		
14	5.0 (H)	Exposure level 5 (Half-tone)		

4) Press [P] key or [START] key.

   The entered value is set.

   When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.

   Check the density of print image.

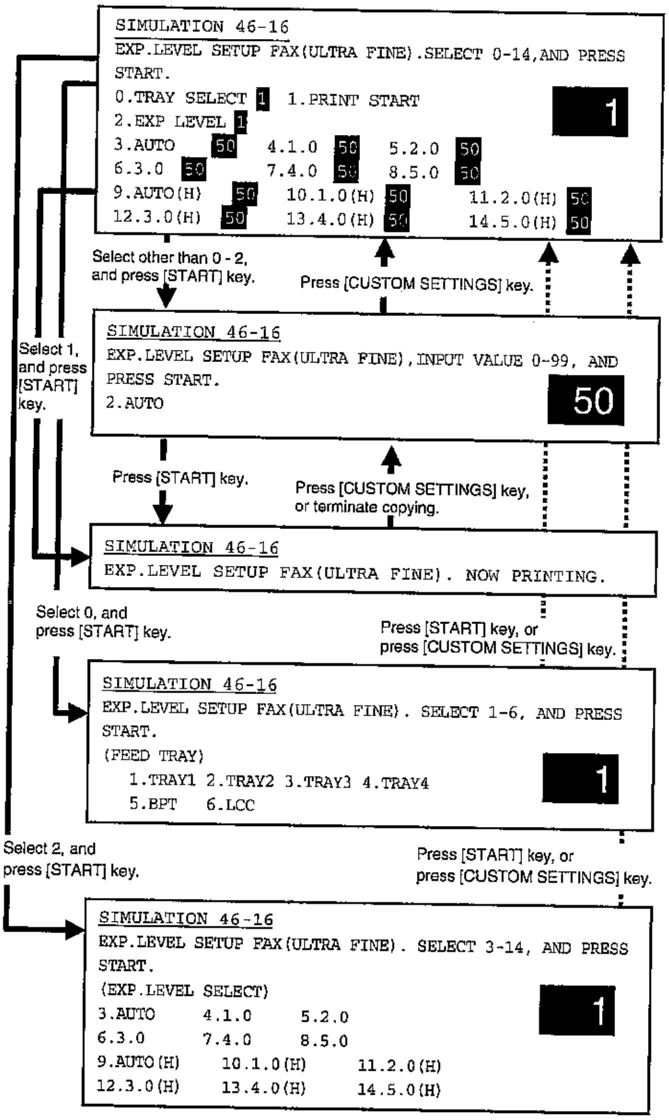
Normal display		NOW PRINTING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



```
SIMULATION 46-16
EXP.LEVEL SETUP FAX(ULTRA FINE).SELECT 0-14,AND PRESS
START.
0.TRAY SELECT 1   1.PRINT START                        1
2.EXP LEVEL 1
3.AUTO      50   4.1.0     50   5.2.0      50
6.3.0  50        7.4.0     50   8.5.0      50
9.AUTO(H)    50   10.1.0(H) 50       11.2.0(H) 50
12.3.0(H)   50   13.4.0(H) 50       14.5.0(H) 50
```

```
SIMULATION 46-16
EXP.LEVEL SETUP FAX(ULTRA FINE),INPUT VALUE 0-99, AND
PRESS START.
2.AUTO                                                 50
```

```
SIMULATION 46-16
EXP.LEVEL SETUP FAX(ULTRA FINE). NOW PRINTING.
```

```
SIMULATION 46-16
EXP.LEVEL SETUP FAX(ULTRA FINE). SELECT 1-6, AND PRESS
START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4                      1
   5.BPT   6.LCC
```

```
SIMULATION 46-16
EXP.LEVEL SETUP FAX(ULTRA FINE). SELECT 3-14, AND PRESS
START.
(EXP.LEVEL SELECT)
3.AUTO      4.1.0      5.2.0                           1
6.3.0       7.4.0      8.5.0
9.AUTO(H)     10.1.0(H)      11.2.0(H)
12.3.0(H)     13.4.0(H)      14.5.0(H)
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

46-17

Purpose	Setting	
Function (Purpose)	Used to set the gain in shading correction.	
Section	Optical (Image scanning)	CCD, CIS
Item	Operation	

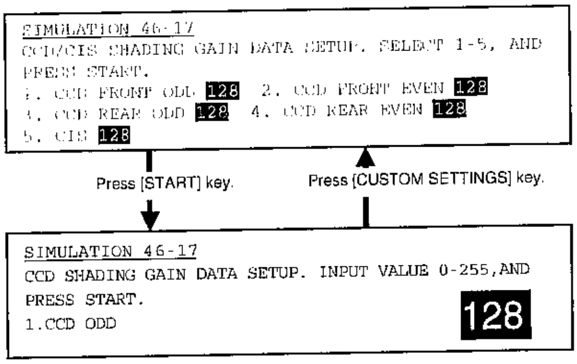
Operation/Procedure

1) Enter the number corresponding to the adjustment item
2) Press [START] key.
3) Enter the shading gain change value with 10-key.
4) Press [START] key.

There is normally no need to change the shading gain with this simulation.

Only when the scanned image density is unsatisfactory though shading is performed, the above procedure is performed.

Item		Set range	Default
1	CCD FRONT ODD	0 - 255	112
2	CCD FRONT EVEN		
3	CCD REAR ODD		
4	CCD REAR EVEN		
5	CIS		128



```
SIMULATION 46-17
CCD/CIS SHADING GAIN DATA SETUP. SELECT 1-5, AND
PRESS START.
1. CCD FRONT ODD 128  2. CCD FRONT EVEN 128
3. CCD REAR ODD 128  4. CCD REAR EVEN 128
5. CIS 128
```

```
SIMULATION 46-17
CCD SHADING GAIN DATA SETUP. INPUT VALUE 0-255,AND
PRESS START.
1.CCD ODD                                        128
```

46-18

Purpose	Adjustment
Function (Purpose)	Used to adjust the gamma (density gradient) in the copy mode.
Section	
Item	Picture quality Density

Operation/Procedure

(Copy mode selection)

1) Select the number corresponding to the copy mode to be adjusted with 10-key. (Select one of 3 - 14.)
2) Press [START] key.

(Print mode selection in the FAX mode)

1) Enter 2 with 10-key.
2) Press [START] key.
3) Select the number corresponding to one of the following adjustment items. (Select one of 3 - 14.)
   * Normal mode (Print density adjustment level)
   * Normal mode (Print density adjustment level) (Half-tone mode)
   * Auto mode
   * Auto mode (Half-tone mode)

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection		
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	OC_AE	AE mode (OC)	0 - 127	64
4	OC_CHARA	Text mode (OC)		
5	OC_MIX	Text/Photo mode (OC)		
6	OC_PHOTO	Photo mode (OC)		
7	SPF_AE	AE mode (SPF)		
8	SPF_CHARA	Text mode (SPF)		
9	SPF_MIX	Text/Photo mode (SPF)		
10	SPF_PHOTO	Photo mode (SPF)		
11	CIS_AE	AE mode (CIS)		
12	CIS_CHARA	Text mode (CIS)		
13	CIS_MIX	Text/Photo mode (CIS)		
14	CIS_PHOTO	Photo mode (CIS)		

Exposure level

Item		
3	AUTO	Auto
4	1.0	Exposure level 1
5	2.0	Exposure level 2
6	3.0	Exposure level 3
7	4.0	Exposure level 4
8	5.0	Exposure level 5
9	AUTO (H)	Auto (Half-tone)
10	1.0 (H)	Exposure level 1 (Half-tone)
11	2.0 (H)	Exposure level 2 (Half-tone)
12	3.0 (H)	Exposure level 3 (Half-tone)
13	4.0 (H)	Exposure level 4 (Half-tone)
14	5.0 (H)	Exposure level 5 (Half-tone)

4) Press [START] key.

Normal display		NOW PRINTING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

(Gamma adjustment)

After completion of the above procedures, perform the following procedures.

1) Enter the gamma level with 10-key.
2) Enter [P] key or [CUSTOM SETTINGS] key.

   When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.

   Check the gamma density (copy density in the low density area and the high density area) of printed copy image. The greater the adjustment value is, the greater the gamma value is, resulting in a higher contrast.

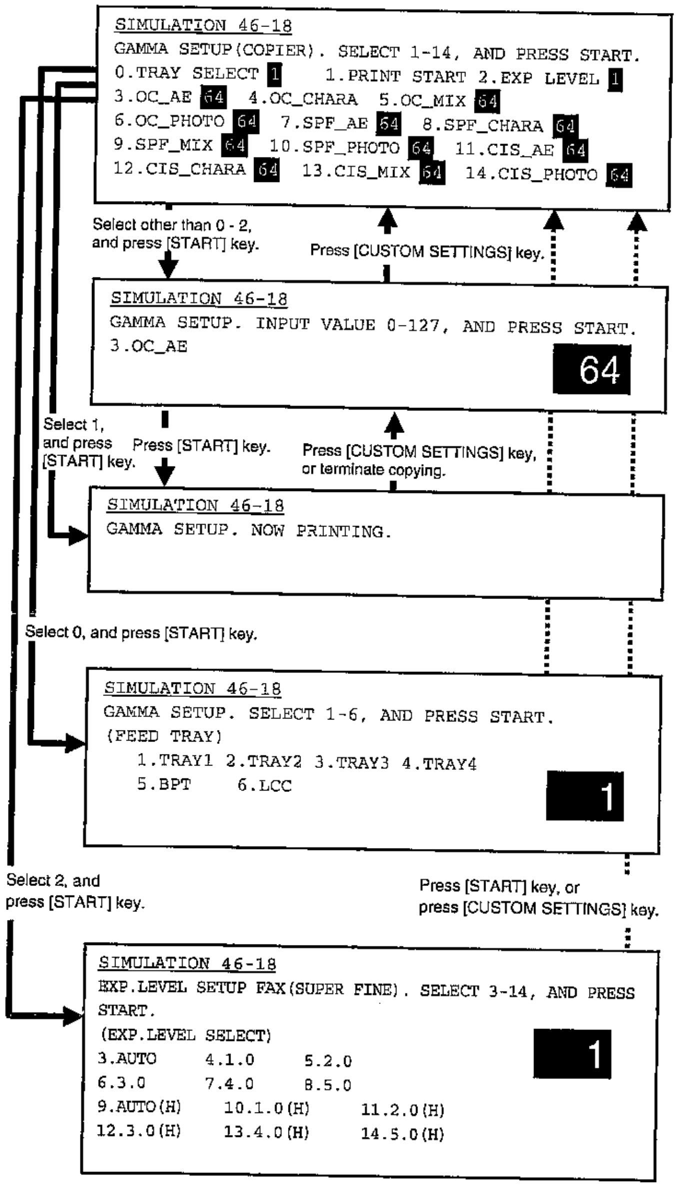
(Copy condition setting in this simulation)

To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



```
SIMULATION 46-18
GAMMA SETUP(COPIER). SELECT 1-14, AND PRESS START.
0.TRAY SELECT 1    1.PRINT START 2.EXP LEVEL 1
3.OC_AE 64  4.OC_CHARA  5.OC_MIX 64
6.OC_PHOTO 64  7.SPF_AE 64  8.SPF_CHARA 64
9.SPF_MIX 64  10.SPF_PHOTO 64  11.CIS_AE 64
12.CIS_CHARA 64  13.CIS_MIX 64  14.CIS_PHOTO 64
```

```
SIMULATION 46-18
GAMMA SETUP. INPUT VALUE 0-127, AND PRESS START.
3.OC_AE
                                              64
```

```
SIMULATION 46-18
GAMMA SETUP. NOW PRINTING.
```

```
SIMULATION 46-18
GAMMA SETUP. SELECT 1-6, AND PRESS START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
   5.BPT    6.LCC                                1
```

```
SIMULATION 46-18
EXP.LEVEL SETUP FAX(SUPER FINE). SELECT 3-14, AND PRESS
START.
(EXP.LEVEL SELECT)
3.AUTO      4.1.0      5.2.0                    1
6.3.0       7.4.0      8.5.0
9.AUTO(H)     10.1.0(H)      11.2.0(H)
12.3.0(H)     13.4.0(H)      14.5.0(H)
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

46-19

Purpose	Adjustment
Function (Purpose)	Used to set the auto mode operation specifications in each mode (copy, scan, FAX).
Section	
Item	Picture quality Density

Operation/Procedure

(Toner save operation YES/NO setting in the auto mode)

1) Select "1. AE MODE" with 1-key.
2) Press [START] key.
3) Select the number corresponding to the operation specifications with 10-key.
4) Press [START] key.

When [START] key is pressed, the adjustment value is set.

(Operation setting in the auto copy mode)

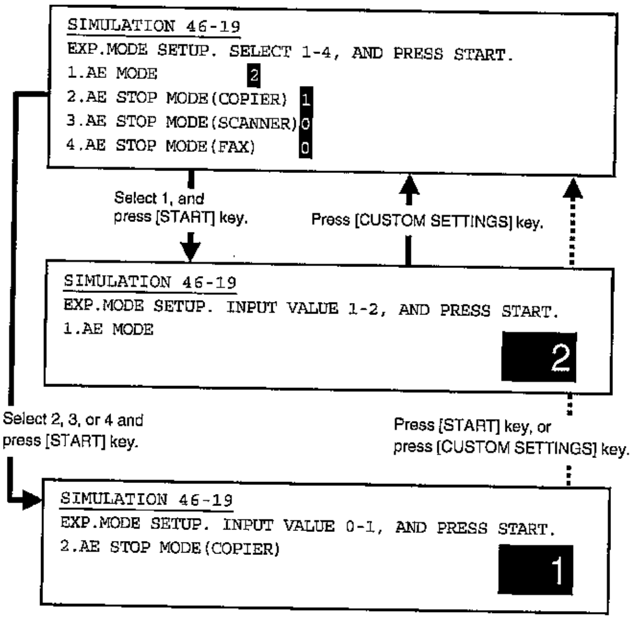
1) Select the number corresponding to the mode with 10-key. (Select one of 2 - 4.)
2) Press [START] key.
3) Select the number corresponding to the operation mode with 10-key.
4) Press [START] key.

1	AE MODE	AE mode
2	AE STOP MODE (COPIER)	AE fixed mode (Copier)
3	AE STOP MODE (SCANNER)	AE fixed mode (Scanner)
4	AE STOP MODE (FAX)	AE fixed mode (FAX)

Mode	Set value	Item	Default
AE mode	1	Image quality priority mode (Normal mode) * Gamma is sharp to provide high contrast images.	1 (Japan) 2 (EX Japan)
	2	Toner consumption priority mode * Gamma is mild to provide low contrast images.	
AE fixed mode	0	AE fixed OFF	1 (COPIER) 0 (SCANNER/ FAX)
	1	AE fixed ON	

AE fixed OFF: The automatic density (exposure) control is performed in real time. (The density level is changed in real time according to the document pattern.)

AE fixed ON: The density at the lead edge of the document is scanned, and the overall density (exposure) level is determined according to the scanned density level. (Overall density level fixed)



```
SIMULATION 46-19
EXP.MODE SETUP. SELECT 1-4, AND PRESS START.
1.AE MODE           2
2.AE STOP MODE(COPIER) 1
3.AE STOP MODE(SCANNER)0
4.AE STOP MODE(FAX)    0
```

```
SIMULATION 46-19
EXP.MODE SETUP. INPUT VALUE 1-2, AND PRESS START.
1.AE MODE
                                                 2
```

```
SIMULATION 46-19
EXP.MODE SETUP. INPUT VALUE 0-1, AND PRESS START.
2.AE STOP MODE(COPIER)
                                                 1
```

Select 1, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 2, 3, or 4 and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

46-20

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy density correction in the SPF copy mode for the document table copy mode. The adjustment is made so that the copy density becomes the same as that of the document table copy mode.
Section	SPF
Item	Picture quality Density

Operation/Procedure

(Adjustment mode selection)

1) Select the number corresponding to the copy mode to be adjusted with 10-key.

   SPF front frame side (Front surface copy), SPF rear frame side (Front surface copy), SPF (Back surface copy) (Select one of 3 - 5.)
2) Press [SATART] key.

(Copy density level adjustment)

1) Enter the density correction value with 10-key.
2) Press [P] key or [START] key.

(Copy condition setting in this simulation)

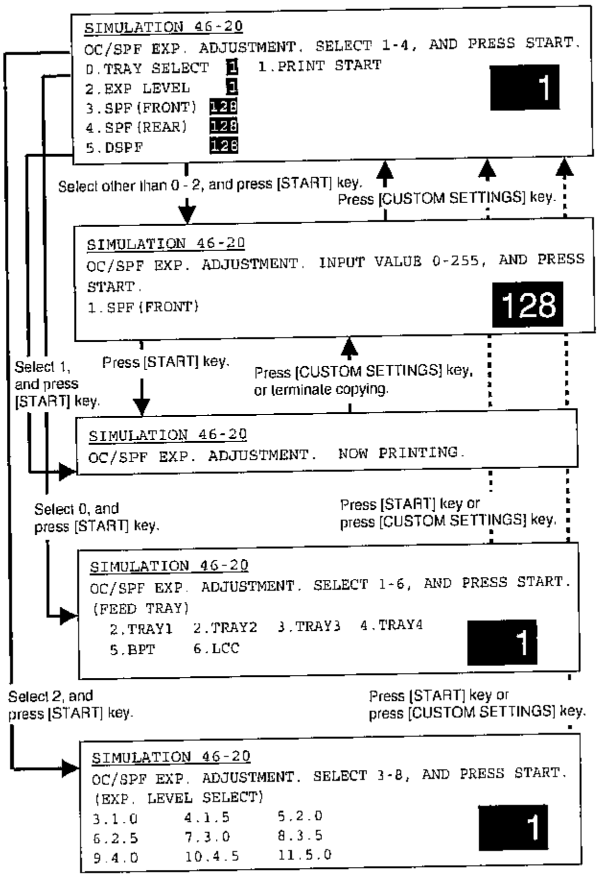
To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.

Item		Content	Set range	Default
0	TRAY SELECT	Paper feed tray selection 1: TRAY1 2: TRAY2 3: TRAY3 4: TRAY4 5: Manual feed 6: Side LCC	–	–
1	PRINT START	Print start (Default)	–	–
2	EXP LEVEL	Exposure level selection 3: Exposure level 1.0 4: Exposure level 1.5 5: Exposure level 2.0 6: Exposure level 2.5 7: Exposure level 3.0 8: Exposure level 3.5 9: Exposure level 4.0 10: Exposure level 4.5 11: Exposure level 5.0	–	–
3	SPF (FRONT)	SPF (front) (front frame side)	0 - 255	128
4	SPF (REAR)	SPF (front) (rear frame side)		
5	DSPF	DSPF (Back surface)		

- "Set value - 128" is added to the shading adjustment value (SIM 46-17).



```
SIMULATION 46-20
OC/SPF EXP. ADJUSTMENT. SELECT 1-4, AND PRESS START.
0.TRAY SELECT  1  1.PRINT START
2.EXP LEVEL    1
3.SPF(FRONT) 128
4.SPF(REAR)  128
5.DSPF       128
                                              1
```

```
SIMULATION 46-20
OC/SPF EXP. ADJUSTMENT. INPUT VALUE 0-255, AND PRESS
START.
1.SPF(FRONT)
                                            128
```

```
SIMULATION 46-20
OC/SPF EXP. ADJUSTMENT.  NOW PRINTING.
```

```
SIMULATION 46-20
OC/SPF EXP. ADJUSTMENT. SELECT 1-6, AND PRESS START.
(FEED TRAY)
  2.TRAY1  2.TRAY2  3.TRAY3  4.TRAY4
  5.BPT    6.LCC
                                              1
```

```
SIMULATION 46-20
OC/SPF EXP. ADJUSTMENT. SELECT 3-8, AND PRESS START.
(EXP. LEVEL SELECT)
3.1.0     4.1.5     5.2.0
6.2.5     7.3.0     8.3.5
9.4.0     10.4.5    11.5.0
                                              1
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.

46-21

Purpose	Adjustment
Function (Purpose)	Used to adjust the scanner exposure level in all the scanner modes.
Section	
Item	Picture quality Density

Operation/Procedure

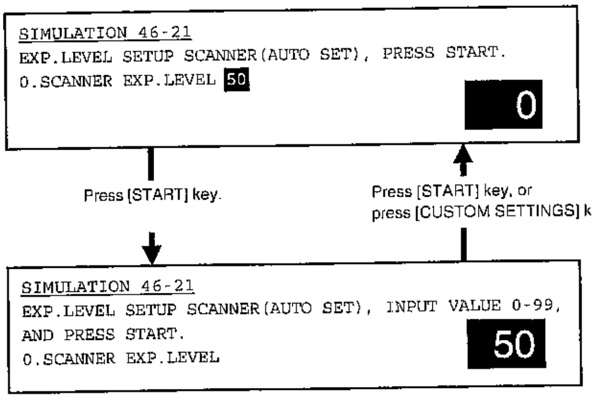
1) Select "SCANNER EXP. LEVEL" with 10-key.
2) Press [START] key.
3) Enter the image density adjustment value.
4) Press [P] key or [START] key.

NOTE: When this simulation is performed to adjust the scan image densities, all the image densities in all the scan modes are changed to the image density level set with this simulation.

That is, the image densities set with SIM 46-22, 23, 24, 25, and 45 are changed to the image density level set with this simulation.

Item			Set range	Default
0	SCANNER EXP. LEVEL	Image density level	0 - 99	50

NOTE: Only the set value is changed and no printing is performed.



```
SIMULATION 46-21
EXP.LEVEL SETUP SCANNER(AUTO SET), PRESS START.
0.SCANNER EXP.LEVEL 50
                                              0
```

```
SIMULATION 46-21
EXP.LEVEL SETUP SCANNER(AUTO SET), INPUT VALUE 0-99,
AND PRESS START.
0.SCANNER EXP.LEVEL
                                             50
```

Press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

46-22

Purpose	Adjustment
Function (Purpose)	Used to adjust the scanner exposure level in the normal text mode.
Section	
Item	Picture quality Density

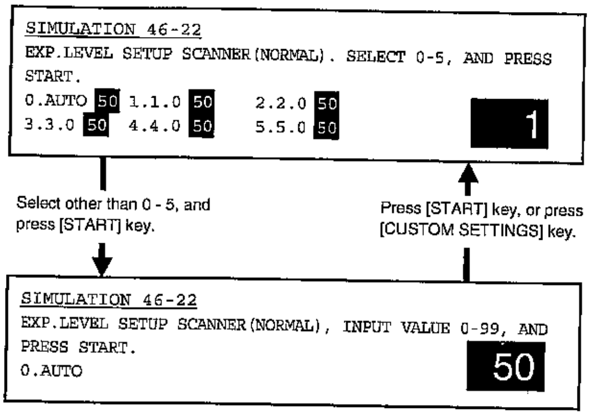
Operation/Procedure

1) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 5.)
   - ∗ Normal mode (Image density adjustment level)
   - ∗ Auto mode
2) Press [START] key.
3) Enter the image density adjustment value with 10-key.
4) Press [START] key or press [CUSTOM SETTINGS] key.

   The adjustment value is set.

Item			Set range	Default
0	AUTO	Auto	0 - 99	50
1	1.0	Exposure level 1		
2	2.0	Exposure level 2		
3	3.0	Exposure level 3		
4	4.0	Exposure level 4		
5	5.0	Exposure level 5		

NOTE: Only the set value is changed and no printing is performed.



```
SIMULATION 46-22
EXP.LEVEL SETUP SCANNER(NORMAL). SELECT 0-5, AND PRESS
START.
0.AUTO 50 1.1.0 50    2.2.0 50
3.3.0 50  4.4.0 50    5.5.0 50                    1
```

Select other than 0 - 5, and press [START] key.

Press [START] key, or press [CUSTOM SETTINGS] key.

```
SIMULATION 46-22
EXP.LEVEL SETUP SCANNER(NORMAL), INPUT VALUE 0-99, AND
PRESS START.
0.AUTO                                           50
```

46-23

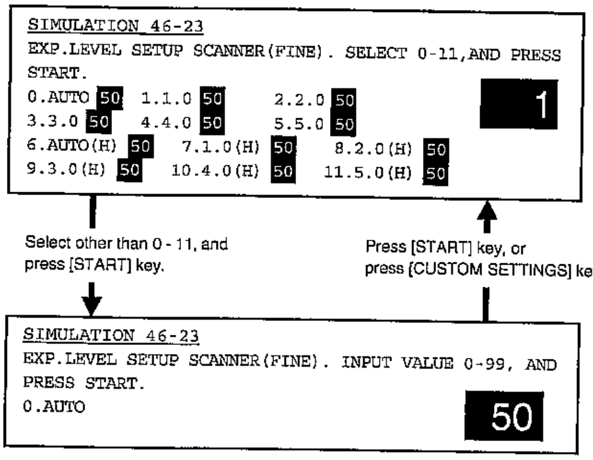
Purpose	Adjustment
Function (Purpose)	Used to adjust the scanner exposure level in the fine text mode.
Section	
Item	Picture quality Density

Operation/Procedure

1) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 11.)
   - * Normal mode (Image density adjustment level)
   - * Normal mode (Image density adjustment level) (Half-tone mode)
   - * Auto mode
   - * Auto mode (Half-tone mode)
2) Press [START] key.
3) Enter the image density adjustment value with 10-key.
4) Press [START] key or press [P] key.
   The adjustment value is set.

Item			Set range	Default
0	AUTO	Auto	0 - 99	50
1	1.0	Exposure level 1		
2	2.0	Exposure level 2		
3	3.0	Exposure level 3		
4	4.0	Exposure level 4		
5	5.0	Exposure level 5		
6	AUTO (H)	Auto (Half-tone)		
7	1.0 (H)	Exposure level 1 (Half-tone)		
8	2.0 (H)	Exposure level 2 (Half-tone)		
9	3.0 (H)	Exposure level 3 (Half-tone)		
10	4.0 (H)	Exposure level 4 (Half-tone)		
11	5.0 (H)	Exposure level 5 (Half-tone)		

NOTE: Only the set value is changed and no printing is performed.



```
SIMULATION 46-23
EXP.LEVEL SETUP SCANNER(FINE). SELECT 0-11,AND PRESS
START.
0.AUTO 50  1.1.0 50      2.2.0 50                 1
3.3.0 50   4.4.0 50      5.5.0 50
6.AUTO(H) 50   7.1.0(H) 50    8.2.0(H) 50
9.3.0(H) 50   10.4.0(H) 50   11.5.0(H) 50
```

Select other than 0 - 11, and press [START] key.

Press [START] key, or press [CUSTOM SETTINGS] key.

```
SIMULATION 46-23
EXP.LEVEL SETUP SCANNER(FINE). INPUT VALUE 0-99, AND
PRESS START.
0.AUTO                                           50
```

46-24

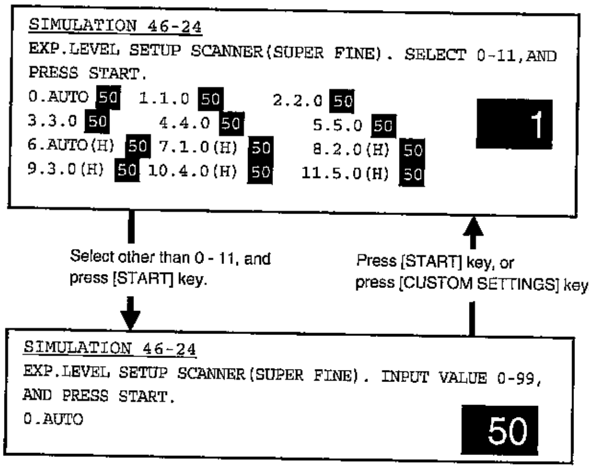
Purpose	Adjustment
Function (Purpose)	Used to adjust the scanner exposure level (in the super fine text mode).
Section	
Item	Picture quality Density

Operation/Procedure

1) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 11.)
   - * Normal mode (Image density adjustment level)
   - * Normal mode (Image density adjustment level) (Half-tone mode)
   - * Auto mode
   - * Auto mode (Half-tone mode)
2) Press [START] key.
3) Enter the image density adjustment value with 10-key.
4) Press [START] key or press [P] key.
   The adjustment value is set.

Item			Set range	Default
0	AUTO	Auto	0 - 99	50
1	1.0	Exposure level 1		
2	2.0	Exposure level 2		
3	3.0	Exposure level 3		
4	4.0	Exposure level 4		
5	5.0	Exposure level 5		
6	AUTO (H)	Auto (Half-tone)		
7	1.0 (H)	Exposure level 1 (Half-tone)		
8	2.0 (H)	Exposure level 2 (Half-tone)		
9	3.0 (H)	Exposure level 3 (Half-tone)		
10	4.0 (H)	Exposure level 4 (Half-tone)		
11	5.0 (H)	Exposure level 5 (Half-tone)		

NOTE: Only the set value is changed and no printing is performed.



```
SIMULATION 46-24
EXP.LEVEL SETUP SCANNER(SUPER FINE). SELECT 0-11,AND
PRESS START.
0.AUTO 50  1.1.0 50      2.2.0 50
3.3.0 50    4.4.0 50      5.5.0 50                1
6.AUTO(H) 50 7.1.0(H) 50    8.2.0(H) 50
9.3.0(H) 50 10.4.0(H) 50   11.5.0(H) 50
```

Select other than 0 - 11, and press [START] key.

Press [START] key, or press [CUSTOM SETTINGS] key.

```
SIMULATION 46-24
EXP.LEVEL SETUP SCANNER(SUPER FINE). INPUT VALUE 0-99,
AND PRESS START.
0.AUTO                                           50
```

46-25

Purpose	Adjustment
Function (Purpose)	Used to adjust the scanner exposure level in the ultra fine text mode.
Section	
Item	Picture quality Density

Operation/Procedure

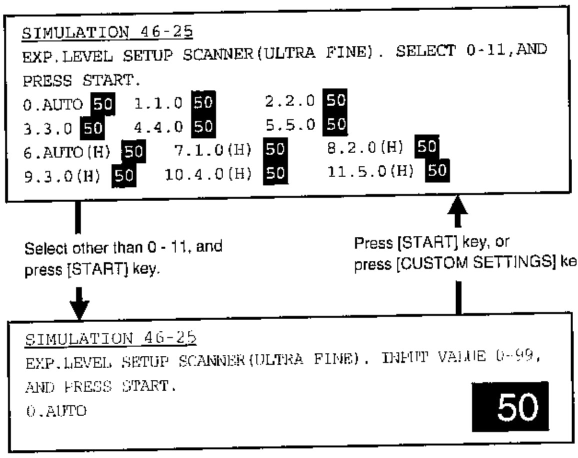
1) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 11.)
   - * Normal mode (Image density adjustment level)
   - * Normal mode (Image density adjustment level) (Half-tone mode)
   - * Auto mode
   - * Auto mode (Half-tone mode)

2) Press [START] key.
3) Enter the image density adjustment value with 10-key.
4) Press [START] key or press [P] key.

The adjustment value is set.

Item			Set range	Default
0	AUTO	Auto	0 - 99	50
1	1.0	Exposure level 1		
2	2.0	Exposure level 2		
3	3.0	Exposure level 3		
4	4.0	Exposure level 4		
5	5.0	Exposure level 5		
6	AUTO (H)	Auto (Half-tone)		
7	1.0 (H)	Exposure level 1 (Half-tone)		
8	2.0 (H)	Exposure level 2 (Half-tone)		
9	3.0 (H)	Exposure level 3 (Half-tone)		
10	4.0 (H)	Exposure level 4 (Half-tone)		
11	5.0 (H)	Exposure level 5 (Half-tone)		

NOTE: Only the set value is changed and no printing is performed.



```
SIMULATION 46-25
EXP.LEVEL SETUP SCANNER(ULTRA FINE). SELECT 0-11,AND
PRESS START.
0.AUTO 50     1.1.0 50       2.2.0 50
3.3.0 50      4.4.0 50       5.5.0 50
6.AUTO(H) 50    7.1.0(H) 50     8.2.0(H) 50
9.3.0(H) 50    10.4.0(H) 50    11.5.0(H) 50
```

Select other than 0 - 11, and press [START] key.

Press [START] key, or press [CUSTOM SETTINGS] key.

```
SIMULATION 46-25
EXP.LEVEL SETUP SCANNER(ULTRA FINE). INPUT VALUE 0-99,
AND PRESS START.
0.AUTO                                          50
```

46-27

Purpose	Adjustment
Function (Purpose)	Used to adjust the gamma (density gradient) of the network scanner mode.
Section	
Item	Picture quality

Operation/Procedure

(Scanner mode selection)

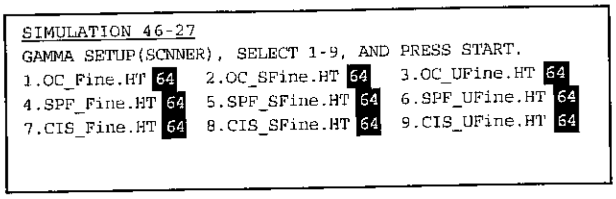
1) Select the number corresponding to the scanner mode to be adjusted with 10-key. (Select one of 1 - 9.)
2) Press [START] key.

(Gamma adjustment)

1) Enter the gamma level with 10-key.
2) Press [START] key.

The greater the adjustment value is, the greater the gamma is, resulting in a higher contrast.

Item			Set range	Default
1	OC_Fine.HT	Fine text (Half-tone) (OC)	0 - 127	64
2	OC_SFine.HT	Super fine (Half-tone) (OC)		
3	OC_UFine.HT	Ultra fine (Half-tone) (OC)		
4	SPF_Fine.HT	Fine text (Half-tone) (SPF)		
5	SPF_SFine.HT	Super fine (Half-tone) (SPF)		
6	SPF_UFine.HT	Ultra fine (Half-tone) (SPF)		
7	CIS_Fine.HT	Fine text (Half-tone) (CIS)		
8	CIS_SFine.HT	Super fine (Half-tone) (CIS)		
9	CIS_UFine.HT	Ultra fine (Half-tone) (CIS)		



```
SIMULATION 46-27
GAMMA SETUP(SCNNER), SELECT 1-9, AND PRESS START.
1.OC_Fine.HT 64    2.OC_SFine.HT 64    3.OC_UFine.HT 64
4.SPF_Fine.HT 64   5.SPF_SFine.HT 64   6.SPF_UFine.HT 64
7.CIS_Fine.HT 64   8.CIS_SFine.HT 64   9.CIS_UFine.HT 64
```

46-31

Purpose	Adjustment
Function (Purpose)	Used to adjust sharpness of the copy mode.
Section	
Item	Picture quality

Operation/Procedure

(Copy mode selection)

1) Select the number corresponding to the copy mode to be adjusted with 10-key. (Select one of 1 - 16.)
2) Press [START] key.

(Sharpness adjustment)

1) Enter the sharpness level with 10-key.
2) Press [START] key.

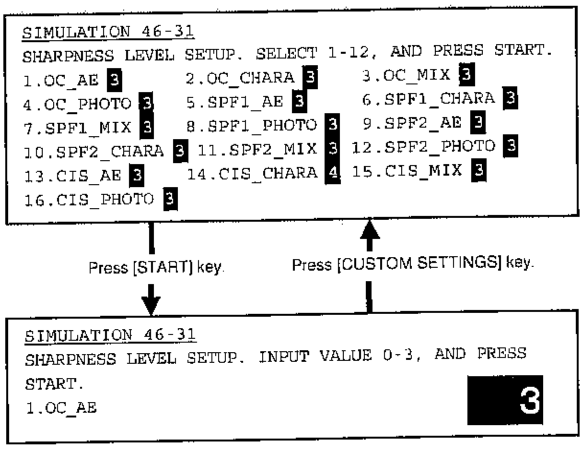
The greater the adjustment value is, the greater the sharpness is.

Item			Set range	Default
1	OC_AE	AE mode (OC)	1 - 5	3
2	OC_CHARA	Text mode (OC)		
3	OC_MIX	Text/Photo mode (OC)		
4	OC_PHOTO	Photo mode (OC)		
5	SPF1_AE	AE mode (SPF1)		
6	SPF1_CHARA	Text mode (SPF1)		
7	SPF1_MIX	Text/Photo mode (SPF1)		
8	SPF1_PHOTO	Photo mode (SPF1)		
9	SPF2_AE	AE mode (SPF2)		
10	SPF2_CHARA	Text mode (SPF2)		
11	SPF2_MIX	Text/Photo mode (SPF2)		
12	SPF2_PHOTO	Photo mode (SPF2)		
13	CIS_AE	AE mode (CIS)		
▲ 14	CIS_CHARA	Text mode (CIS)		4
15	CIS_MIX	Text/Photo mode (CIS)		3
16	CIS_PHOTO	Photo mode (CIS)		

* SPF1: DSPF front surface (CCD)

* SPF2: DSPF back surface (CCD)

▲



```
SIMULATION 46-31
SHARPNESS LEVEL SETUP. SELECT 1-12, AND PRESS START.
1.OC_AE 3         2.OC_CHARA 3      3.OC_MIX 3
4.OC_PHOTO 3      5.SPF1_AE 3       6.SPF1_CHARA 3
7.SPF1_MIX 3      8.SPF1_PHOTO 3    9.SPF2_AE 3
10.SPF2_CHARA 3  11.SPF2_MIX 3     12.SPF2_PHOTO 3
13.CIS_AE 3       14.CIS_CHARA 4    15.CIS_MIX 3
16.CIS_PHOTO 3
```

Press [START] key

Press [CUSTOM SETTINGS] key.

```
SIMULATION 46-31
SHARPNESS LEVEL SETUP. INPUT VALUE 0-3, AND PRESS
START.
1.OC_AE                                          3
```

46-39

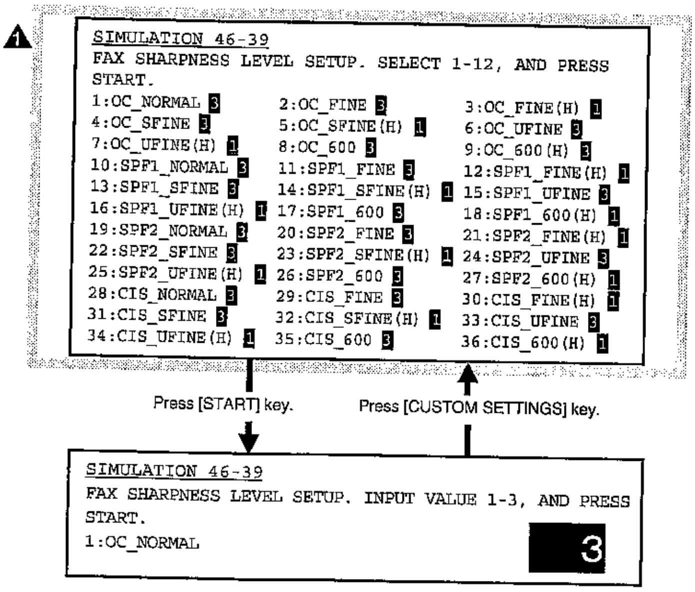
Purpose	Adjustment
Function (Purpose)	Used to adjust sharpness of the FAX mode.
Section	
Item	Picture quality

Operation/Procedure

1) Enter the sharpness level with 10-key.
2) Press [START] key.

The greater the adjustment value is, the greater the sharpness is.

Default: 3 (Normal), 1 (Halftone)



```
SIMULATION 46-39
FAX SHARPNESS LEVEL SETUP. SELECT 1-12, AND PRESS
START.
1:OC_NORMAL 3        2:OC_FINE 3          3:OC_FINE(H) 1
4:OC_SFINE 3         5:OC_SFINE(H) 1      6:OC_UFINE 3
7:OC_UFINE(H) 1      8:OC_600 3           9:OC_600(H) 3
10:SPF1_NORMAL 3     11:SPF1_FINE 3       12:SPF1_FINE(H) 1
13:SPF1_SFINE 3      14:SPF1_SFINE(H) 1   15:SPF1_UFINE 3
16:SPF1_UFINE(H) 1   17:SPF1_600 3        18:SPF1_600(H) 1
19:SPF2_NORMAL 3     20:SPF2_FINE 3       21:SPF2_FINE(H) 1
22:SPF2_SFINE 3      23:SPF2_SFINE(H) 1   24:SPF2_UFINE 3
25:SPF2_UFINE(H) 1   26:SPF2_600 3        27:SPF2_600(H) 1
28:CIS_NORMAL 3      29:CIS_FINE 3        30:CIS_FINE(H) 1
31:CIS_SFINE 3       32:CIS_SFINE(H) 1    33:CIS_UFINE 3
34:CIS_UFINE(H) 1    35:CIS_600 3         36:CIS_600(H) 1
```

Press [START] key. Press [CUSTOM SETTINGS] key.

```
SIMULATION 46-39
FAX SHARPNESS LEVEL SETUP. INPUT VALUE 1-3, AND PRESS
START.
1:OC_NORMAL                                          3
```

46-45

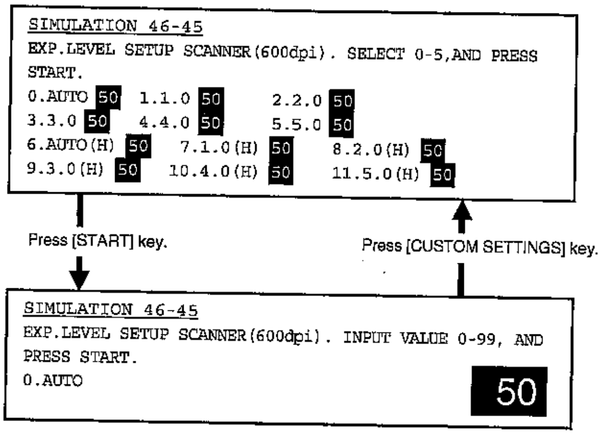
Purpose	Adjustment
Function (Purpose)	Used to adjust the image density in the FAX mode (600dpi).
Section	
Item	Picture quality

Operation/Procedure

1) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 11.)
   - * Normal mode (Image density adjustment level)
   - * Normal mode (Image density adjustment level) (Half-tone mode)
   - * Auto mode
   - * Auto mode (Half-tone mode)
2) Press [START] key.
3) Enter the image density adjustment value with 10-key.
4) Press [START] key or press [P] key.

   The adjustment value is set.

Item			Set range	Default
0	AUTO	Auto	0 - 99	50
1	1.0	Exposure level 1		
2	2.0	Exposure level 2		
3	3.0	Exposure level 3		
4	4.0	Exposure level 4		
5	5.0	Exposure level 5		
6	AUTO (H)	Auto (Half-tone)		
7	1.0 (H)	Exposure level 1 (Half-tone)		
8	2.0 (H)	Exposure level 2 (Half-tone)		
9	3.0 (H)	Exposure level 3 (Half-tone)		
10	4.0 (H)	Exposure level 4 (Half-tone)		
11	5.0 (H)	Exposure level 5 (Half-tone)		



```
SIMULATION 46-45
EXP.LEVEL SETUP SCANNER(600dpi). SELECT 0-5,AND PRESS
START.
0.AUTO 50     1.1.0 50        2.2.0 50
3.3.0 50      4.4.0 50        5.5.0 50
6.AUTO(H) 50    7.1.0(H) 50     8.2.0(H) 50
9.3.0(H) 50    10.4.0(H) 50     11.5.0(H) 50
```

Press [START] key. Press [CUSTOM SETTINGS] key.

```
SIMULATION 46-45
EXP.LEVEL SETUP SCANNER(600dpi). INPUT VALUE 0-99, AND
PRESS START.
0.AUTO                                              50
```

48

48-1

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy magnification ratio (in the main scanning and the sub scanning directions).
Section	Optical (Image scanning)
Item	Picture quality

Operation/Procedure

(Adjustment mode selection)

1) Select the number corresponding to the copy mode to be adjusted with 10-key. (Select one of 3 - 7.)
2) Press [START] key.

Item			Set range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 99	50
1	COPY START	Copy START (Default)		
2	MAGNIFICATION	Print magnification ratio		
3	CCD (MAIN)	SCAN main scanning magnification ratio adjustment (CCD)		
4	CCD (SUB)	SCAN sub scanning magnification ratio adjustment (CCD)		
5	SPF (SUB)	SPF front surface magnification ratio adjustment (Sub scan)		
6	CIS (MAIN)	SPF back surface magnification ratio adjustment (CIS main scan)		
7	SPF (MAIN)	SPF front surface magnification ratio adjustment (Main scan)		

(Copy magnification ratio adjustment)

1) Select the number corresponding to the copy magnification ratio adjustment mode to be adjusted with 10-key. (Select one of 3 - 7.)
2) Press [START] key.
3) Enter the copy magnification ratio adjustment value with 10-key.
4) Press [P] key or [START] key.

   When the [START] key is pressed, copying is performed and the adjustment value is set simultaneously.

   The copy magnification ratio in the sub scan direction can be adjusted by changing the scan speed (motor RPM).

Normal display		NOW COPYING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

▲1 : Feb. 9 2004

The greater the value is, the greater the correction is. One step corresponds to 0.1% adjustment.

(Copy condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray of the selected paper with 10-key. (Select one of 1 - 6.)
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

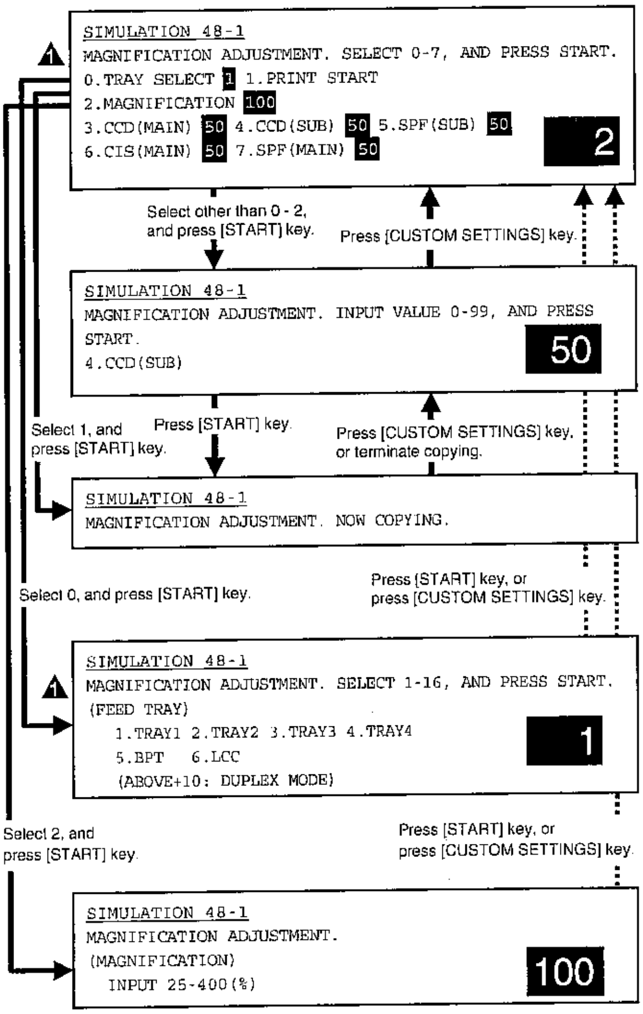
When the total of the above set value (1 - 6) and 10 is entered, the mode is changed to the duplex mode.

* The copy magnification ratio can be set with the following

1) Enter 2 with 10-key.
2) Press [START] key.
3) Enter the copy magnification ratio with 10-key.
4) Press [START] key.

Set range	25 - 400%

NOTE: When [P] key is pressed after entering the adjustment value, the adjustment value is set. When [START] key is pressed instead, the adjustment value is set and copying is performed.



```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. SELECT 0-7, AND PRESS START.
0.TRAY SELECT 1 1.PRINT START
2.MAGNIFICATION 100
3.CCD(MAIN) 50 4.CCD(SUB) 50 5.SPF(SUB) 50
6.CIS(MAIN) 50 7.SPF(MAIN) 50                          2
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. INPUT VALUE 0-99, AND PRESS
START.                                                50
4.CCD(SUB)
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. NOW COPYING.
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT. SELECT 1-16, AND PRESS START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4                     1
   5.BPT   6.LCC
   (ABOVE+10: DUPLEX MODE)
```

```
SIMULATION 48-1
MAGNIFICATION ADJUSTMENT.
(MAGNIFICATION)
  INPUT 25-400(%)                                     100
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

48-5

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy magnification ratio in the sub scanning direction.
Section	Optical (Image scanning)
Item	Picture quality

Operation/Procedure

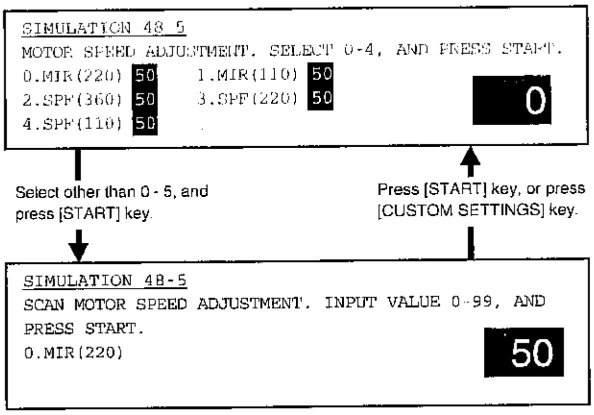
When the sub scanning direction image magnification ratio adjustment with SIM 48-1 cannot provide a satisfactory result if a different magnification ration is set and a copy is made, perform this simulation.

When there is an error in the copy magnification ratio in reduction copy, change the adjustment value of the high speed mode. When there is an error in the copy magnification ratio in enlargement copy, change the adjustment value of the low speed mode.

1) Select the number corresponding to the adjustment mode with 10-key.
2) Press [START] key.
3) Enter the copy adjustment value with 10-key.
   The scanner/SPF motor rotation sped adjustment value is entered.

Item		Content	Set range	Default
0	MIR (220)	Mirror motor (220mm/sec)	0 - 99	50
1	MIR (110)	Mirror motor (110mm/sec)		
2	SPF (360)	SPF motor (360mm/sec)		
3	SPF (220)	SPF motor (220mm/sec)		
4	SPF (110)	SPF motor (110mm/sec)		

4) Press [START] key.



```
SIMULATION 48 5
MOTOR SPEED ADJUSTMENT. SELECT 0-4, AND PRESS START.
0.MIR(220) 50    1.MIR(110) 50
2.SPF(360) 50    3.SPF(220) 50                 0
4.SPF(110) 50
```

```
SIMULATION 48-5
SCAN MOTOR SPEED ADJUSTMENT. INPUT VALUE 0-99, AND
PRESS START.
0.MIR(220)                                    50
```

Select other than 0 - 5, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

50

50-1

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy image position and the void area (image loss) adjustment on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-5 and 50-2 (Simplified method).) (Document table mode)
Section	
Item	Picture quality Image position

Operation/Procedure

(Lead edge image loss/void area adjustment)

1) Set the lead edge image loss adjustment value (LEAD EDGE) and the paper lead edge void adjustment value (DENA) as follows.
   (Standard set value) Lead edge image loss: 1.5mm (LEDA: 15)
   Paper lead edge void: 3.5mm (DENA: 35)
   * Set LEAD to 15. (Enter 15 as the adjustment value of LEAD, and press [P] key.) (0.1mm/step)

* Set DENA to 35. (Enter 35 as the adjustment value of DENA, and press [P] key.) (0.1mm/step)

2) Make a copy at the normal ratio (100%) and check the lead edge void area and the image loss. (Enter 100 as the set value of the copy magnification ratio (MAGNIFICATION), and press [START] key.)

3) If the adjustment result is not satisfactory, perform the following procedures.

* If the lead edge void are is not 3.5mm:
Change the adjustment value of RRCB and perform the adjustment. (Change the adjustment value of RRCB and press [START] key.) (1msec/step)

* If the lead edge image loss is not 1.5mm:
Change the adjustment value of RRCA and perform the adjustment. (Change the adjustment value of RRCA and press [START] key.)
(Shift for the adjustment value change: 0.2mm/step)

(Rear edge void area adjustment)

Adjust so that the rear edge void area is 3.5mm. (Change the adjustment value of TRAIL EDGE, and press [START] key.)

(Front/rear frame direction image loss adjustment)

Set the adjustment value of SIDE to 20. (Enter 20 as the adjustment value of SIDE, and press [P] key.)

When the adjustment value is changed, the image position is shifted in the front/rear frame direction.

(Front/rear frame direction void area adjustment)

Adjust so that the total of the front/rear direction void areas is 7.0mm. (Change the adjustment values of FRONT/REAR, and press [START] key.)

Front frame void area = 3.5mm   Rear frame void area = 3.5mm

If, as shown above, the front and the rear void areas are not even, use SIM 50-5 to adjust the image off-center position.

Item		Content	Set range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	–
1	COPY START	Copy START (Default)	–	–
2	MAGNIFICATION	Print magnification ratio	25 - 400%	–
(Lead edge adjustment value)				
3	RRCA	Document scan start position	0 - 99	50
4	RRCB	Resist roller clutch ON timing adjustment value		
10	SIDE2 ADJ.	Correction value for RRCB in the back surface print mode	1 - 99	50
(Image loss set value)				
5	LEAD	Lead edge image loss set value	0 - 99	15
6	SIDE	Side image loss set value		20
(Void set value)				
7	LEAD_EDGE (DENA)	Lead edge void set value	0 - 99	35
8	TRAIL_EDGE (DENB)	Rear edge void adjustment value		
9	FRONT/REAR	Front/Rear void adjustment value		

NOTE: When [P] is pressed after entering an adjustment value, the adjustment value is set. When [START] key is pressed instead, the adjustment value is set and copying is performed.)

Normal display		NOW COPYING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

(Copy condition in this simulation)

* To select paper (paper feed tray), perform the following procedures.

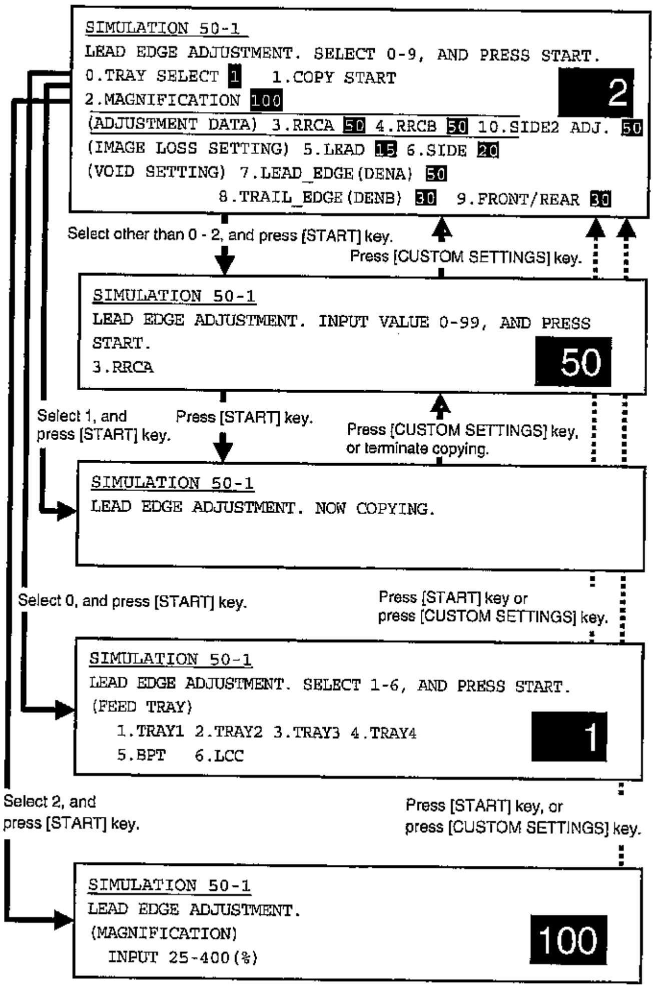
1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray of the target paper with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

* To set the magnification ratio, perform the following procedure.

1) Enter 2 with 10-key.
2) Press [START] key.
3) Enter the copy magnification ratio with 10-key.
4) Press [START] key.

Set range	25 - 400 (%)



```
SIMULATION 50-1
LEAD EDGE ADJUSTMENT. SELECT 0-9, AND PRESS START.
0.TRAY SELECT 1    1.COPY START                              2
2.MAGNIFICATION 100
(ADJUSTMENT DATA) 3.RRCA 50 4.RRCB 50 10.SIDE2 ADJ. 50
(IMAGE LOSS SETTING) 5.LEAD 15 6.SIDE 20
(VOID SETTING) 7.LEAD_EDGE(DENA) 50
               8.TRAIL_EDGE(DENB) 30  9.FRONT/REAR 30
```

```
SIMULATION 50-1
LEAD EDGE ADJUSTMENT. INPUT VALUE 0-99, AND PRESS
START.
3.RRCA                                                50
```

```
SIMULATION 50-1
LEAD EDGE ADJUSTMENT. NOW COPYING.
```

```
SIMULATION 50-1
LEAD EDGE ADJUSTMENT. SELECT 1-6, AND PRESS START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4                    1
   5.BPT   6.LCC
```

```
SIMULATION 50-1
LEAD EDGE ADJUSTMENT.
(MAGNIFICATION)
  INPUT 25-400(%)                                   100
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

50-2

Purpose	Adjustment
Function (Purpose)	Used to adjust the document scan position, the image print position, and the void area (image loss). (Simple adjustment) (This adjustment is the simple method of SIM 50-1.) (Document table mode)
Section	
Item	Picture quality Image position

Operation/Procedure

(Lead edge image loss/void area adjustment)

1) Set the RRGB value of SIM 50-1 to 80 - 99.
2) Set the lead edge image loss adjustment value (LEAD EDG) and the paper lead edge void adjustment value (DENA) to the values specified below.

   (Standard set value) Lead edge image loss: 1.5mm
   Paper lead edge void: 3.5mm (DENA: 35)

   * Set the adjustment value of LEAD to 15. (Enter 15 as the adjustment value of LEAD and press [P] key.
   * Set the adjustment value of DENA to 35. (Enter 35 as the adjustment value of DENA and press [P] key.)
3) Set the adjustment value of L1 to 0. (Enter 0 as the adjustment value of L1, and press [P] key.)
4) Set the adjustment value of L2 to 0. (Enter 0 as the adjustment value of L2, and press [P] key.)
5) Make a copy at 400%, and calculate the values of L1 and L2. (Enter 100 as the set value (MAGNIFICATION) of the copy magnification ratio, and press [START] key.) (Place a scale on the document table and make a copy.)

   L1 = Distance (mm) from the image lead edge position to the scale position of 10mm x 10
   L2 = Distance (mm) from the image lead edge position to the paper lead edge x 10
6) Enter the above values as the set values of L1 and L2. (Enter the adjustment values of L1 and L2, and press [P] key.)

If the adjustment result is not satisfactory, perform the above procedures again from the beginning, or use SIM 50-1 to adjust.

NOTE: If a satisfactory result is not obtained with the above procedures, through the adjustment values are changed individually, the normal adjustment cannot be made.

Perform procedures 3) to 6) continuously.

(Rear edge void area adjustment)

Adjust so that the rear edge void area is 3.5mm. (Change the adjustment value of TRAIL EDGE, and press [START] key.)

(Front/rear frame direction image loss adjustment)

Set the adjustment value of SIDE to 20. (Enter 20 as the adjustment value of SIDE, and press [P] key.)

When this adjustment value is changed, the image position is shifted in the front/rear frame direction.

(Front/rear frame direction void area adjustment)

Adjust so that the total of the front/rear direction void areas is 7.0mm. (Change the adjustment values of FRONT/REAR, and press [START] key.)

Front frame void area = 3.5mm Rear frame void area = 3.5mm

If, as shown above, the front and the rear void areas are not even, use SIM 50-5 to adjust the image off-center position.

	Item	Content	Set range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	–
1	COPY START	Copy START (Default)	–	–
2	MAGNIFICATION	Print magnification ratio	25 - 400%	400
(Lead edge adjustment value)				
3	L1	Distance from the image lead edge to the scale of 10mm. (Platen 400%, 0.1mm increment)	0 - 999	–
4	L2	Distance from the paper lead edge to the image lead edge (0.1mm increment)		–
(Image loss set value)				
5	LEAD	Lead edge image loss set value	0 - 99	15
6	SIDE	Side image loss set value		20
(Void set value)				
7	LEAD_EDGE (DENA)	Lead edge void set value	0 - 99	35
8	TRAIL_EDGE (DENB)	Rear edge void adjustment value		
9	FRONT/REAR	Front/Rear void adjustment value		

NOTE: When [P] is pressed after entering an adjustment value, the adjustment value is set. When [START] key is pressed instead, the adjustment value is set and copying is performed.)

Normal display		NOW COPYING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

(Copy condition in this simulation)

* To select paper (paper feed tray), perform the following procedures.

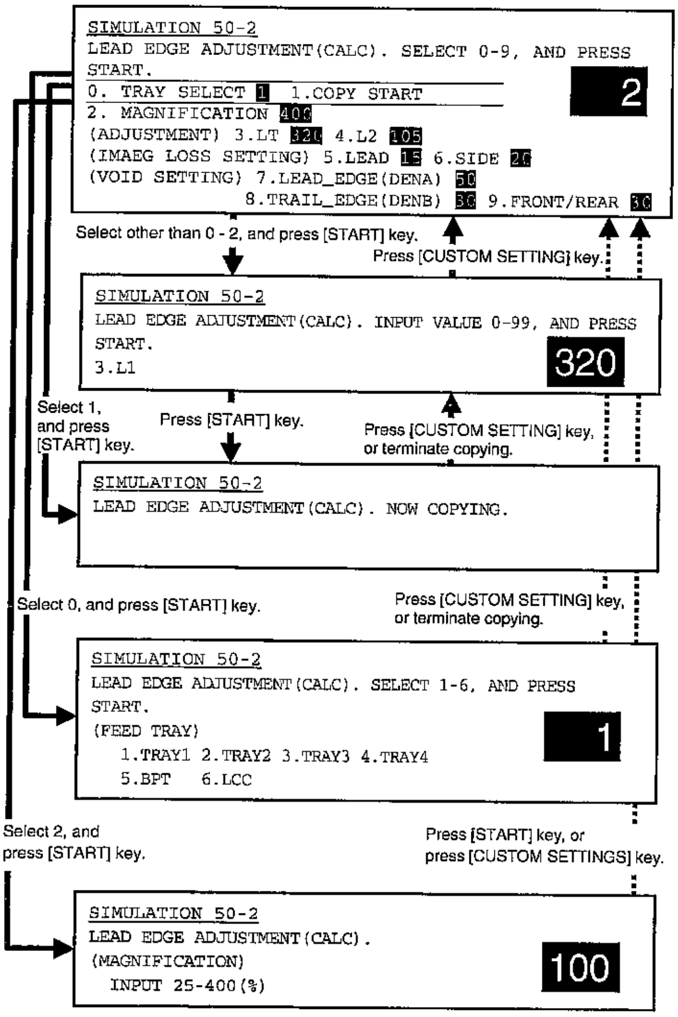
1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray of the target paper with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

* To set the magnification ratio, perform the following procedure.

1) Enter 2 with 10-key.
2) Press [START] key.
3) Enter the copy magnification ratio with 10-key.
4) Press [START] key.

Set range	25 - 400 (%)



```
SIMULATION 50-2
LEAD EDGE ADJUSTMENT(CALC). SELECT 0-9, AND PRESS
START.                                              2
0. TRAY SELECT 1  1.COPY START
2. MAGNIFICATION 400
(ADJUSTMENT) 3.LT 320 4.L2 105
(IMAEG LOSS SETTING) 5.LEAD 15 6.SIDE 20
(VOID SETTING) 7.LEAD_EDGE(DENA) 50
               8.TRAIL_EDGE(DENB) 30 9.FRONT/REAR 30
```

```
SIMULATION 50-2
LEAD EDGE ADJUSTMENT(CALC). INPUT VALUE 0-99, AND PRESS
START.
3.L1                                                320
```

```
SIMULATION 50-2
LEAD EDGE ADJUSTMENT(CALC). NOW COPYING.
```

```
SIMULATION 50-2
LEAD EDGE ADJUSTMENT(CALC). SELECT 1-6, AND PRESS
START.
(FEED TRAY)                                         1
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
   5.BPT   6.LCC
```

```
SIMULATION 50-2
LEAD EDGE ADJUSTMENT(CALC).
(MAGNIFICATION)                                     100
  INPUT 25-400(%)
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTING] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTING] key, or terminate copying.
Select 0, and press [START] key.
Press [CUSTOM SETTING] key, or terminate copying.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

50-5

Purpose	Adjustment
Function (Purpose)	Used to adjust the print image position and the void area (image loss) on print paper. (Adjustment as the print engine) (This adjustment is reflected on all the FAX/printer/copy modes.)
Section	
Item	Picture quality

Operation/Procedure

(Print image off-center position adjustment)

1) Enter the number corresponding to the paper feed tray to be adjusted with 10-key. (Select one of 10 - 16.) (Table 1)
2) Press [START] key.
3) Enter the adjustment value with 10-key.
4) Press [P] key or [START] key. When [START] key is pressed, the adjustment value is set and printing is performed. (Table 2)

   Check the off-center of the self-print patter of print-out.

   (Shift for the adjustment value change: 0.1mm/step)

The greater the adjustment value is, the more the print image is shifted to the front.

(Lead edge void area adjustment)

1) Set the lead edge void adjustment value (DENA) as specified below.

   (Standard set value) Paper lead edge void: 3.5mm (DENA: 35)

   * Set the adjustment value of DENA to 35. Enter 35 as the adjustment value of DENA, and press [P] key.
2) Check the lead edge void area on the self print pattern.

   (Enter 1 and press [START] key.)
3) If the adjustment result is not satisfactory, perform the following procedures.

   * If the lead edge void area is not 3.5mm:

     Change the adjustment value of RRCB and perform the adjustment. (Change the adjustment value of RRCB and press [START] key.)

     (Shift for the adjustment value change: 0.1mm/step)

(Front/rear frame direction void area adjustment)

Adjust so that the total of the front/rear direction void areas is 7.0mm. (Change the adjustment values of FRONT/REAR, and press [START] key.)

Front frame void area = 3.5mm   Rear frame void area = 3.5mm

(Paper resist adjustment)

1) Enter the number corresponding to the paper feed tray to be adjusted with 10-key. (Select one of 3 - 9.) (Table 1)
2) Press [START] key.
3) Enter the adjustment value with 10-key.
4) Press [P] key or [START] key. When [START] key is pressed, the adjustment value is set and printing is performed. (Table 2)

If the relative positions of paper and print images vary or a paper jam occurs, change the adjustment value.

(Print condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key. (Table 3)
4) Press [START] key. (The paper feed tray is selected.)

When the total of the above set value (1 - 6) and 10 is entered, the mode is changed to the duplex print mode.

NOTE: When [P] key is pressed after entering the adjustment value in this simulation, the adjustment value is set. When [START] key is pressed instead, the adjustment value is set and copying is performed.

(Table 1)

Item			Set range	Default	
				AR-M550N/U, AR-620N/U	AR-M700N/U
0	TRAY SELECT	Paper feed tray selection (1 - 6)	–	–	
1	PRINT START	Print start (Default)	–	–	
(Lead edge adjustment value)					
2	RRCB	Resist roller clutch ON timing adjustment value	0 - 99	50	
(Resist adjustment value)					
▲1 3	TRAY1	Tray 1 adjustment	0 - 99	46	48
4	TRAY2	Tray 2 adjustment		45	46
5	TRAY3	Tray 3 adjustment		46	47
6	TRAY4	Tray 4 adjustment		46	47
7	BPT	Manual feed tray adjustment		45	46
8	LCC	Side LCC adjustment		45	46
9	ADU	Adjustment when paper is fed again from ADU		43	46
(Off-center set value) Self print					
10	TRAY 1	Tray 1 adjustment	0 - 99	50	
11	TRAY 2	Tray 2 adjustment			
12	TRAY 3	Tray 3 adjustment			
13	TRAY 4	Tray 4 adjustment			
14	BPT	Manual feed tray adjustment			
15	LCC	Side LCC adjustment			
16	ADU	Adjustment when paper is fed again from ADU			

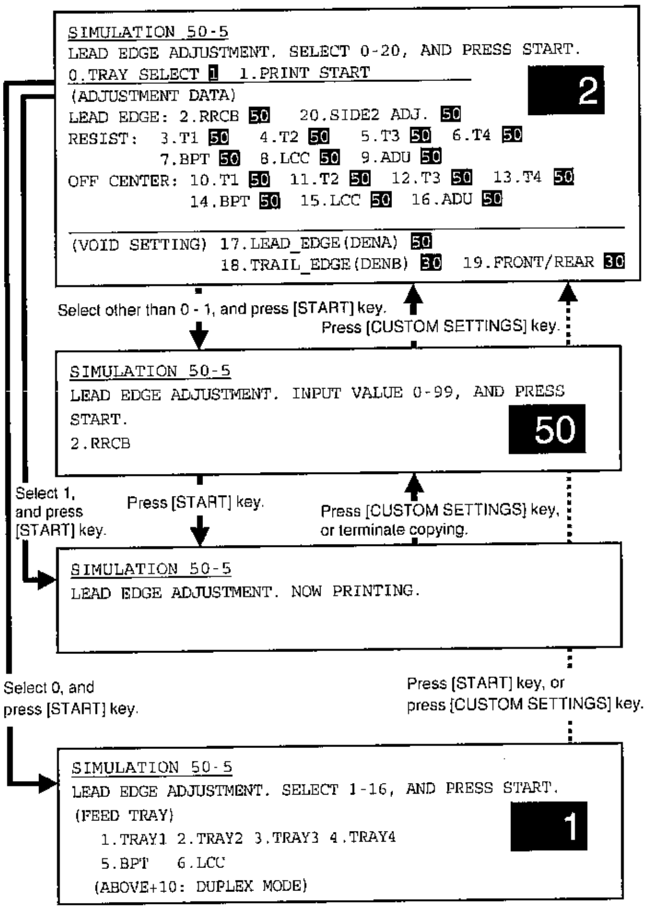
Item			Set range	Default	
				AR-M550N/U, AR-620N/U	AR-M700N/U
(Void set value)					
17	LEAD_EDGE (DENA)	Lead edge void set value	0 - 99	35	
18	TRAIL_EDGE (DENB)	Rear edge void adjustment value			
19	FRONT/ REAR	Front/Rear void adjustment value			
20	SIDE2 ADJ.	RRCB correction value in the back surface print mode	1 - 99	50	

(Table 2)

Normal display		NOW PRINTING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

(Table 3)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC



```
SIMULATION 50-5
LEAD EDGE ADJUSTMENT. SELECT 0-20, AND PRESS START.
0.TRAY SELECT 1  1.PRINT START                          2
(ADJUSTMENT DATA)
LEAD EDGE: 2.RRCB 50   20.SIDE2 ADJ. 50
RESIST:   3.T1 50   4.T2 50   5.T3 50   6.T4 50
          7.BPT 50  8.LCC 50  9.ADU 50
OFF CENTER: 10.T1 50  11.T2 50  12.T3 50  13.T4 50
            14.BPT 50  15.LCC 50  16.ADU 50
(VOID SETTING) 17.LEAD_EDGE(DENA) 50
               18.TRAIL_EDGE(DENB) 30  19.FRONT/REAR 30
```

```
SIMULATION 50-5
LEAD EDGE ADJUSTMENT. INPUT VALUE 0-99, AND PRESS
START.                                                 50
2.RRCB
```

```
SIMULATION 50-5
LEAD EDGE ADJUSTMENT. NOW PRINTING.
```

```
SIMULATION 50-5
LEAD EDGE ADJUSTMENT. SELECT 1-16, AND PRESS START.
(FEED TRAY)                                             1
  1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
  5.BPT   6.LCC
  (ABOVE+10: DUPLEX MODE)
```

Select other than 0 - 1, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

50-6

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy image position and void area (image loss) on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-7 (simple method).) (SPF mode)
Section	
Item	Picture quality

Operation/Procedure

(Lead edge image loss adjustment) (Table 1)

1) Set the front and back surface image loss adjustment values (LEAD EDGE) as specified below:

   (Standard set value) Lead edge image loss: 1.5mm (LEAD: 1.5)
   Paper lead edge: 3.5mm (DENA: 35)

   * Set the adjustment value of LEAD to 15. (Enter 15 as the adjustment value of LEAD EDGE, and press [P] key.)

2) Make a duplex copy at 100% with the SPF, and check that the lead edge (image loss) is 1.5mm either on the front surface and the back surface. (Select the duplex mode in the paper selection mode of SIM 50-6.) (Table 3) (Enter 100 as the copy magnification ratio set value (MAGNIFICATION), and press [START] key.)

If the adjustment result is not satisfactory, perform the following procedures:

3) Change the adjustment values of SIDE1 and SIDE2, and perform the adjustment. (Change the adjustment values of SIDE1 and SIDE2, and press [START] key.)

   SIDE1: SPF front surface document lead edge scan position adjustment value
   SIDE2: SPF back surface document lead edge scan position adjustment value

   (Shift for the adjustment value change: 0.1mm/step)

   (The image scan start timing is determined with the detection timing of the document lead edge by the detector SPPD4.)

Repeat procedures 2) and 3) until a satisfactory result is obtained.

(Rear edge image loss adjustment)

1) Use the SPF at 100% to make a duplex copy, and check that the rear edge image loss is 1.5mm on the front and the back surfaces. (Select the duplex mode in the paper selection mode of SIM 50-6.) (Enter 100 as the copy magnification ratio set value (MAGNIFICATION), and press [START] key.)

If the adjustment value is not satisfactory, , perform the following procedure.

2) Change the adjustment value of TRAIL EDGE. Change the adjustment value of TRAIL EDGE, and press [START] key.

Repeat the above procedures until a satisfactory result is obtained.

(Front/rear frame direction image loss adjustment)

Set the adjustment value of the front surface and the back surface (FRONT/REAR) to 20. (Enter 20 as the adjustment value of FRONT/REAR, and press [P] key.)

When the adjustment value is changed, the image position is shifted in the front/rear frame direction.

NOTE: When [P] key is pressed after entering the adjustment value, the adjustment value is set. When [START] key is pressed instead, the adjustment value is set and copying is performed. (Table 2)

(Copy condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key. (Table 3)
4) Press [START] key. (The paper feed tray is selected.)

* To set the copy magnification ratio, perform the following procedure.

1) Enter 2 with 10-key.
2) Press [START] key.
3) Enter the copy magnification ratio with 10-key.
4) Press [START] key.

Set range	25 - 200 (%)

(Table 1)

	Item		Set range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	–
1	COPY START	Copy START (Default)	–	–
2	MAGNIFICATION	Print magnification ratio	25 - 200%	–
(Lead edge adjustment value)				
3	SIDE1	Front surface document scan start position adjustment value	0 - 99	50
4	SIDE2	Back surface document scan start position adjustment value		
(Image loss set value: SIDE 1)				
5	LEAD_EDGE	Front surface lead edge image loss set value	0 - 99	15
6	FRONT_REAR	Front surface side edge image loss set value		20
7	TRAIL_EDGE	Front surface rear edge image loss set value	0 - 20	0
(Image loss set value: SIDE 2)				
8	LEAD_EDGE	Back surface lead edge image loss set value	0 - 99	15
9	FRONT/REAR	Back surface side edge image loss set value		20
10	TRAIL_EDGE	Back surface rear edge image loss set value	0 - 20	0

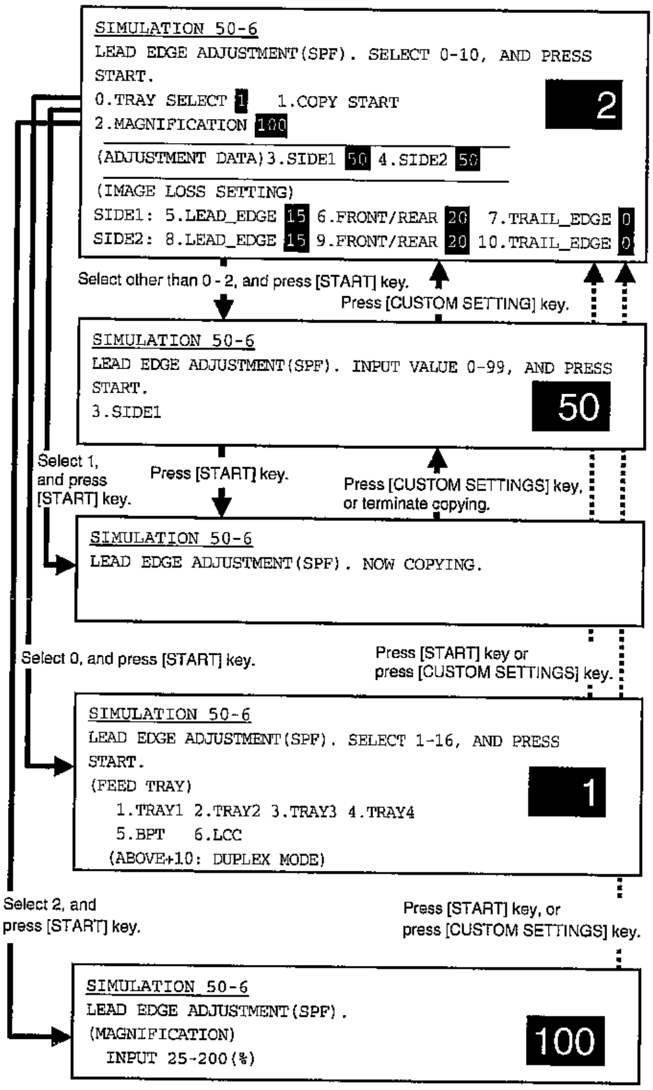
(Table 2)

Normal display		NOW COPYING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

(Table 3)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

When the total of the above set value and 10 is entered, the mode is changed to the duplex mode (DD), and a duplex copy is made.



```
SIMULATION 50-6
LEAD EDGE ADJUSTMENT(SPF). SELECT 0-10, AND PRESS
START.
0.TRAY SELECT 1   1.COPY START                    2
2.MAGNIFICATION 100
(ADJUSTMENT DATA)3.SIDE1 50 4.SIDE2 50
(IMAGE LOSS SETTING)
SIDE1: 5.LEAD_EDGE 15 6.FRONT/REAR 20  7.TRAIL_EDGE 0
SIDE2: 8.LEAD_EDGE 15 9.FRONT/REAR 20 10.TRAIL_EDGE 0
```

```
SIMULATION 50-6
LEAD EDGE ADJUSTMENT(SPF). INPUT VALUE 0-99, AND PRESS
START.
3.SIDE1                                          50
```

```
SIMULATION 50-6
LEAD EDGE ADJUSTMENT(SPF). NOW COPYING.
```

```
SIMULATION 50-6
LEAD EDGE ADJUSTMENT(SPF). SELECT 1-16, AND PRESS
START.
(FEED TRAY)                                       1
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
   5.BPT   6.LCC
  (ABOVE+10: DUPLEX MODE)
```

```
SIMULATION 50-6
LEAD EDGE ADJUSTMENT(SPF).
(MAGNIFICATION)                                 100
  INPUT 25-200(%)
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTING] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

50-7

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy image position and void area (image loss) on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-6.) (SPF mode)
Section	
Item	Picture quality

Operation/Procedure

(Lead edge image loss adjustment)

1) Set the front and back surface image loss adjustment values (LEAD EDGE) as specified below:

   (Standard set value) Lead edge image loss: 1.5mm (LEAD: 1.5)
   Paper lead edge void: 3.5mm (DENA: 35)

   * Set the adjustment value of LEAD to 15. (Enter 15 as the adjustment value of LEAD EDGE, and press [P] key.)
2) Set the adjustment value of L4 to 0. (Enter 0 as the adjustment value of L4, and press [P] key.
3) Set the adjustment value of L5 to 0. (Enter 0 as the adjustment value of L5, and press [P] key.
4) Make a copy at 200% with the SPF, and calculate the values of L4 and L5. (Enter 200 as the set value of the copy magnification ratio set value (MAGNIFICATION) and press [START] key.)

   L4 = Distance (mm) from the image lead edge position to the scale of 10mm x 10

L5 = Distance (mm) from the image lead edge position to the paper lead edge x 10

5) Enter the above values as the set values of L4 and L5. (Enter the adjustment values of L4 and L5, and press [P] key.)

   (The image scan start timing is determined with the detection timing of the document lead edge by the detector SPPD4.)

If the adjustment result is not satisfactory, perform the above procedures again or adjust with SIM 50-1.

NOTE: If the adjustment result of the above procedures is not satisfactory, though the adjustment value is changed individually, the adjustment cannot be completed normally.

Repeat procedures 2) - 6) until a satisfactory result is obtained.

(Rear edge image loss adjustment)

Adjust so that the rear edge image loss is 3.5mm. (Change the adjustment value of TRAIL EDGE, and press [START] key.)

(Front/rear frame direction image loss adjustment)

Set the adjustment value of SIDE to 20. (Enter 20 as the adjustment value of SIDE, and press [P] key.)

When the adjustment value is changed, the image position is shifted in the front/rear frame direction.

NOTE: When [P] key is pressed after entering the adjustment value, the adjustment value is set. When [START] key is pressed instead, the adjustment value is set and copying is performed. (Table 2)

(Copy condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key. (Table 3)
4) Press [START] key. (The paper feed tray is selected.)

* To set the copy magnification ratio, perform the following procedure.

1) Enter 2 with 10-key.
2) Press [START] key.
3) Enter the copy magnification ratio with 10-key.
4) Press [START] key.

Set range	25 - 200 (%)

(Table 1)

	Item		Set range	Default
0	TRAY SELECT	Paper feed tray selection (1 - 6)	–	–
1	COPY START	Copy START (Default)	–	–
2	MAGNIFICATION	Print magnification ratio (25 - 200%)	–	–
(Lead edge adjustment value)				
3	L4	Distance from the front surface image lead edge to the scale of 10mm (SPF: 200%)	0 - 999	–
4	L5	Distance from the back surface image lead edge to the scale of 10mm (SPF: 200%)		–
(Image loss set value: SIDE 1)				
5	LEAD_EDGE	Front surface lead edge image loss set value	0 - 99	15
6	FRONT_REAR	Front surface side edge image loss set value		20
7	TRAIL_EDGE	Front surface rear edge image loss set value	0 - 20	0
(Image loss set value: SIDE 2)				
8	LEAD_EDGE	Back surface lead edge image loss set value	0 - 99	15
9	FRONT/REAR	Back surface side edge image loss set value		20
10	TRAIL_EDGE	Back surface rear edge image loss set value	0 - 20	0

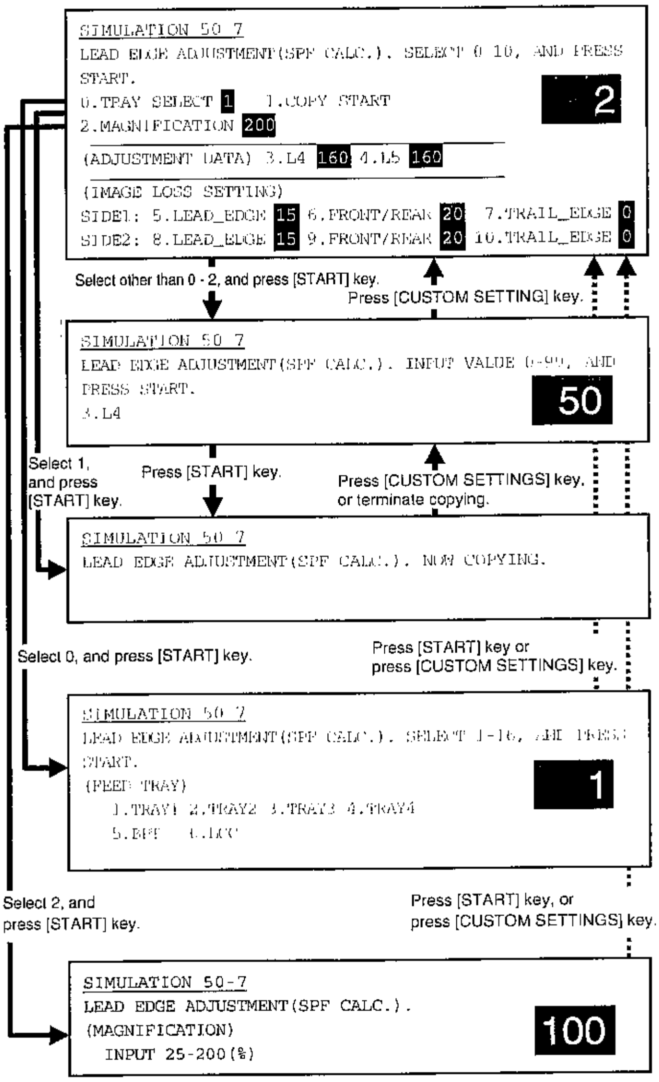
(Table 2)

Normal display		NOW COPYING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

(Table 3)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

When the total of the above set value and 10 is entered, the mode is changed to the duplex mode (DD), and a duplex copy is made.



```
SIMULATION 50-7
LEAD EDGE ADJUSTMENT(SPF CALC.). SELECT 0-10, AND PRESS
START.
0.TRAY SELECT 1    1.COPY START
2.MAGNIFICATION 200
(ADJUSTMENT DATA) 3.L4 160 4.L5 160
(IMAGE LOSS SETTING)
SIDE1: 5.LEAD_EDGE 15 6.FRONT/REAR 20  7.TRAIL_EDGE 0
SIDE2: 8.LEAD_EDGE 15 9.FRONT/REAR 20 10.TRAIL_EDGE 0
                                                  2
```

```
SIMULATION 50-7
LEAD EDGE ADJUSTMENT(SPF CALC.). INPUT VALUE 0-99, AND
PRESS START.
3.L4                                              50
```

```
SIMULATION 50-7
LEAD EDGE ADJUSTMENT(SPF CALC.). NOW COPYING.
```

```
SIMULATION 50-7
LEAD EDGE ADJUSTMENT(SPF CALC.). SELECT 1-16, AND PRESS
START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
   5.BPT   6.LCC                                   1
```

```
SIMULATION 50-7
LEAD EDGE ADJUSTMENT(SPF CALC.).
(MAGNIFICATION)
  INPUT 25-200(%)                                100
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTING] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

50-10

Purpose	Adjustment
Function (Purpose)	Used to adjust the print image off-center position. (Adjusted separately for each paper feed section.)
Section	
Item	Picture quality Image position

Operation/Procedure

(Print image off-center position adjustment)

NOTE: This simulation cannot provide an accurate adjustment. Do not use.

1) Enter the number corresponding to the number of the paper feed tray to be adjusted with 10-key. (Select one of 3 - 9.)

	Item		Set range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	–
1	COPY START	Copy START (Default)	–	–
2	MAGNIFICATION	Print magnification ratio	25 - 400%	100
(Off-center adjustment value)				
3	TRAY1	Tray 1 adjustment	0 - 99	50
4	TRAY2	Tray 2 adjustment		
5	TRAY3	Tray 3 adjustment		
6	TRAY4	Tray 4 adjustment		
7	BPT	Manual feed tray adjustment		
8	LCC	Side LCC adjustment		
9	ADU	Adjustment when paper is fed again from ADU		

2) Press [START] key.
3) Enter the adjustment value with 10-key.
4) Press [P] key or [START] key. When [START] key is pressed, the adjustment value set and copying is performed.

Normal display		NOW COPYING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

(Image off-center adjustment)

1) Enter 1 with 10-key.
2) Press [START] key. The adjustment pattern is printed.
3) Check the off-center of the printed image.
(UNIT: 0.1mm/step When the adjustment value is increased, the print image is shifted to the front direction.)

NOTE: This adjustment can be performed with SIM 50-5.

(Copy condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key. (Select one of 1 - 6)
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

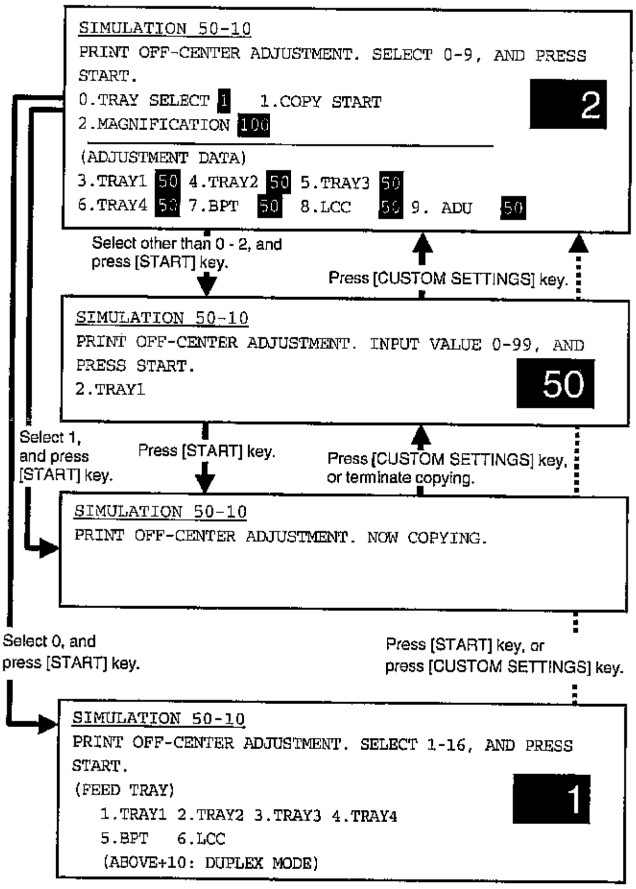
When the total of the above set value and 10 is entered, the mode is changed to the duplex print mode.

* To set the copy magnification ratio, perform the following procedure.

1) Enter 2 with 10-key.
2) Press [START] key.
3) Enter the copy magnification ratio with 10-key.
4) Press [START] key.

Set range	25 - 400 (%)

NOTE: When [P] key is pressed after entering the adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.



```
SIMULATION 50-10
PRINT OFF-CENTER ADJUSTMENT. SELECT 0-9, AND PRESS
START.
0.TRAY SELECT 1   1.COPY START                    2
2.MAGNIFICATION 100
(ADJUSTMENT DATA)
3.TRAY1 50 4.TRAY2 50 5.TRAY3 50
6.TRAY4 50 7.BPT  50 8.LCC  50 9. ADU  50
```

```
SIMULATION 50-10
PRINT OFF-CENTER ADJUSTMENT. INPUT VALUE 0-99, AND
PRESS START.
2.TRAY1                                          50
```

```
SIMULATION 50-10
PRINT OFF-CENTER ADJUSTMENT. NOW COPYING.
```

```
SIMULATION 50-10
PRINT OFF-CENTER ADJUSTMENT. SELECT 1-16, AND PRESS
START.
(FEED TRAY)
  1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4                 1
  5.BPT   6.LCC
  (ABOVE+10: DUPLEX MODE)
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

50-12

Purpose	Adjustment
Function (Purpose)	Used to adjust the scan image off-center position. (Adjusted separately for each scan mode.)
Section	
Item	Picture quality Image position

Operation/Procedure

(Select the scan mode to be adjusted.)

1) Enter the number corresponding to the scan mode to be adjusted with 10-key. (Select one of 3 - 5.)

	Item		Set range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 5	–
1	COPY START	Copy START (Default)	–	–
2	MAGNIFICATION	Print magnification ratio	25 - 400%	100
(Resist adjustment value)				
3	PLATEN	OC mode adjustment	0 - 99	50
4	SPF SIDE1	SPF front surface adjustment		
5	SPF SIDE2	SPF back surface adjustment		

2) Press [START] key.

(Scan off-center position adjustment)

1) Enter the scan image position adjustment value with 10-key.
2) Press [P] key or [START] key.
   When [START] key is pressed, the adjustment value is set and copying is performed.

Normal display		NOW COPYING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

Check the off-center of the printed image.

Repeat the above procedures until a satisfactory result is obtained.

(UNIT: 0.1mm/step When the adjustment value is increased, the print image is shifted to the front direction.)

(Copy condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key. (Select one of 1 - 6)
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	Side LCC

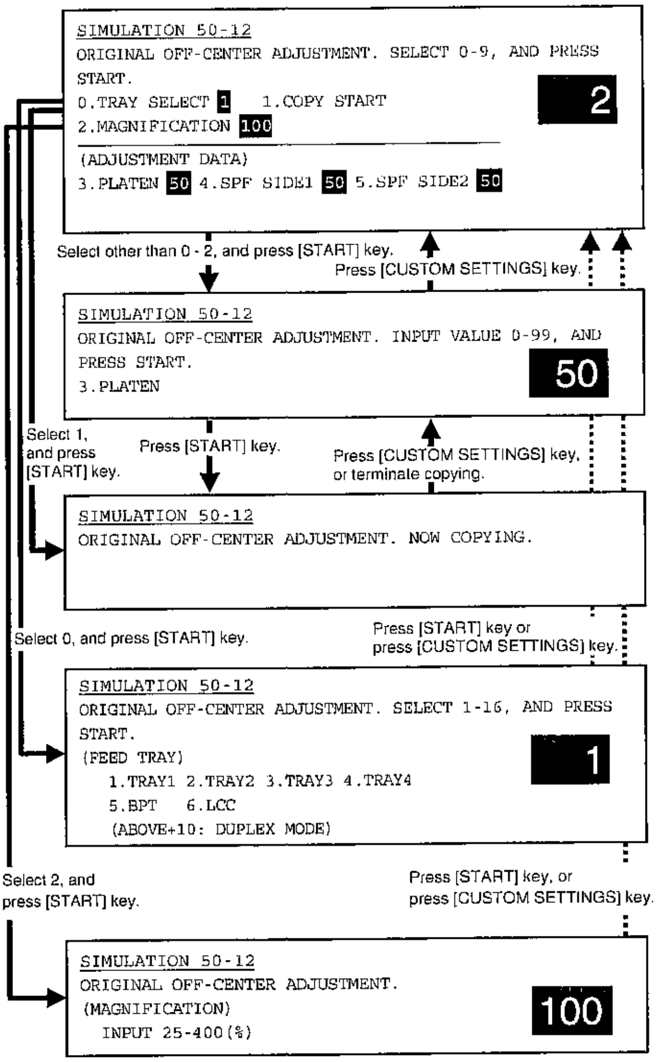
When the total of the above set value and 10 is entered, the mode is changed to the duplex print mode.

* To set the copy magnification ratio, perform the following procedure.

1) Enter 2 with 10-key.
2) Press [START] key.
3) Enter the copy magnification ratio with 10-key.
4) Press [START] key.

Set range	25 - 400 (%)

NOTE: When [P] key is pressed after entering the adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.



```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. SELECT 0-9, AND PRESS
START.
0.TRAY SELECT 1    1.COPY START                    2
2.MAGNIFICATION 100
(ADJUSTMENT DATA)
3.PLATEN 50 4.SPF SIDE1 50 5.SPF SIDE2 50
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. INPUT VALUE 0-99, AND
PRESS START.                                        50
3.PLATEN
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. NOW COPYING.
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT. SELECT 1-16, AND PRESS
START.
(FEED TRAY)                                          1
  1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
  5.BPT  6.LCC
  (ABOVE+10: DUPLEX MODE)
```

```
SIMULATION 50-12
ORIGINAL OFF-CENTER ADJUSTMENT.
(MAGNIFICATION)                                    100
  INPUT 25-400(%)
```

Select other than 0 - 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key or press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

50-27

Purpose	Adjustment
Function (Purpose)	Used to adjust the image loss of the scan image in the FAX/scan mode.
Section	
Item	Picture quality

Operation/Procedure

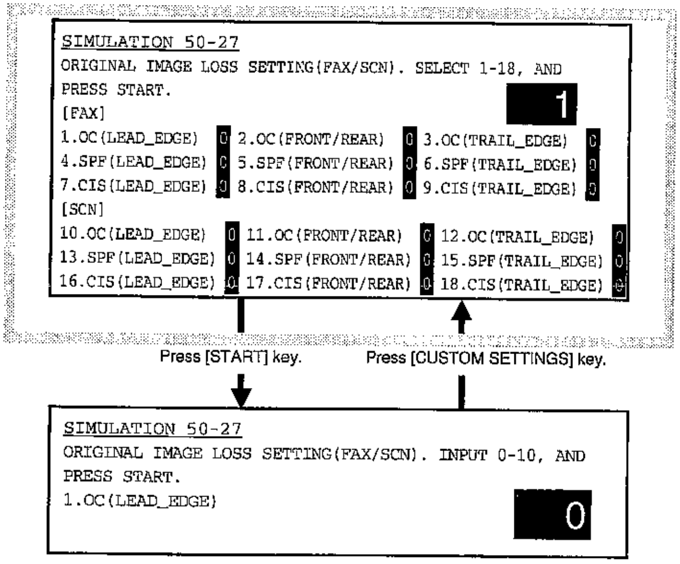
(Select the scan mode to be adjusted.)

1) Enter the number corresponding to the adjustment item with 10-key.
2) Press [START] key.
3) Enter the adjustment value with 10-key.
4) Press [START] key.

(Shift for the adjustment value change: 1.0mm/step)

Item			Set range	Default
FAX send				
1	OC (LEAD_EDGE)	OC lead edge	0 - 10 (Unit 1mm)	3 (3mm)
2	OC (FRONT/REAR)	OC side		
3	OC (TRAIL_EDGE)	OC rear edge		
4	SPF (LEAD_EDGE)	SPF lead edge		
5	SPF (FRONT/REAR)	SPF side		
6	SPF (TRAIL_EDGE)	SPF rear edge		
7	CIS (LEAD_EDGE)	CIS lead edge		
8	CIS (FRONT/REAR)	CIS side		
9	CIS (TRAIL_EDGE)	CIS rear edge		

	Item		Set range	Default
Scanner mode				
10	OC (LEAD_EDGE)	OC lead edge	0 - 10 (Unit 1mm)	0 (0mm)
11	OC (FRONT/REAR)	OC side		
12	OC (TRAIL_EDGE)	OC rear edge		
13	SPF (LEAD_EDGE)	SPF lead edge		
14	SPF (FRONT/REAR)	SPF side		
15	SPF (TRAIL_EDGE)	SPF rear edge		
16	CIS (LEAD_EDGE)	CIS lead edge		
17	CIS (FRONT/REAR)	CIS side		
18	CIS (TRAIL_EDGE)	CIS rear edge		



```
SIMULATION 50-27
ORIGINAL IMAGE LOSS SETTING(FAX/SCN). SELECT 1-18, AND
PRESS START.                                          1
[FAX]
1.OC(LEAD_EDGE)   0 2.OC(FRONT/REAR)   0 3.OC(TRAIL_EDGE)   0
4.SPF(LEAD_EDGE)  0 5.SPF(FRONT/REAR)  0 6.SPF(TRAIL_EDGE)  0
7.CIS(LEAD_EDGE)  0 8.CIS(FRONT/REAR)  0 9.CIS(TRAIL_EDGE)  0
[SCN]
10.OC(LEAD_EDGE)  0 11.OC(FRONT/REAR)  0 12.OC(TRAIL_EDGE)  0
13.SPF(LEAD_EDGE) 0 14.SPF(FRONT/REAR) 0 15.SPF(TRAIL_EDGE) 0
16.CIS(LEAD_EDGE) 0 17.CIS(FRONT/REAR) 0 18.CIS(TRAIL_EDGE) 0
```

Press [START] key. Press [CUSTOM SETTINGS] key.

```
SIMULATION 50-27
ORIGINAL IMAGE LOSS SETTING(FAX/SCN). INPUT 0-10, AND
PRESS START.
1.OC(LEAD_EDGE)                                       0
```

51

51-2

Purpose	Adjustment
Function (Purpose)	Used to adjust the contact pressure of paper on the resist roller of each section (each paper feed, duplex feed and SPF paper feed of the copier). (This adjustment is required when the print image position variations are considerably great or when paper jams occur frequently.)
Section	Paper transport (Discharge/Switchback/Transport)
Item	Operation

Operation/Procedure

(Select the scan mode to be adjusted.)

1) Enter the number corresponding to the paper feed tray to be adjusted with 10-key. (Select one of 2 - 12.)

	Item		Set range	Default	
				AR-M550N/U, AR-620N/U	AR-M700N/U
0	TRAY SELECT	Paper feed tray selection (1 - 5)	–	–	–
1	PRINT START	Print start (Default)	–	–	–
2	TRAY1	Tray 1 adjustment value	0 - 99	46	48
3	TRAY2	Tray 2 adjustment value		45	46
4	TRAY3	Tray 3 adjustment value		46	47
5	TRAY4	Tray 4 adjustment value			
6	BPT	Manual feed tray resist adjustment value		45	46
7	LCC	Side LCC resist adjustment value			
8	ADU	ADU resist adjustment value		43	46
9	SPF (TOP)	SPF resist adjustment value (Top speed)		50	
10	SPF (HIGH)	SPF resist adjustment value (High speed)	0 - 99	50	
11	SPF (LOW)	SPF resist adjustment value (Low speed)			
12	SPF FEED (TOP)	SPF paper fed resist adjustment value (Top speed)	0 - 99	50	
13	SPF FEED (HIGH)	SPF paper feed resist adjustment value (High speed)			
14	SPF FEED (LOW)	SPF paper feed resist adjustment (Low speed)			

2) Press [START] key.

(Resist adjustment)

1) Enter the resist adjustment value with 10-key.
2) Press [START] key.
When [START] key is pressed, the adjustment value is set and paper feed and copying are performed.

Normal display		NOW PRINTING.
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

(Copy condition setting in this simulation)

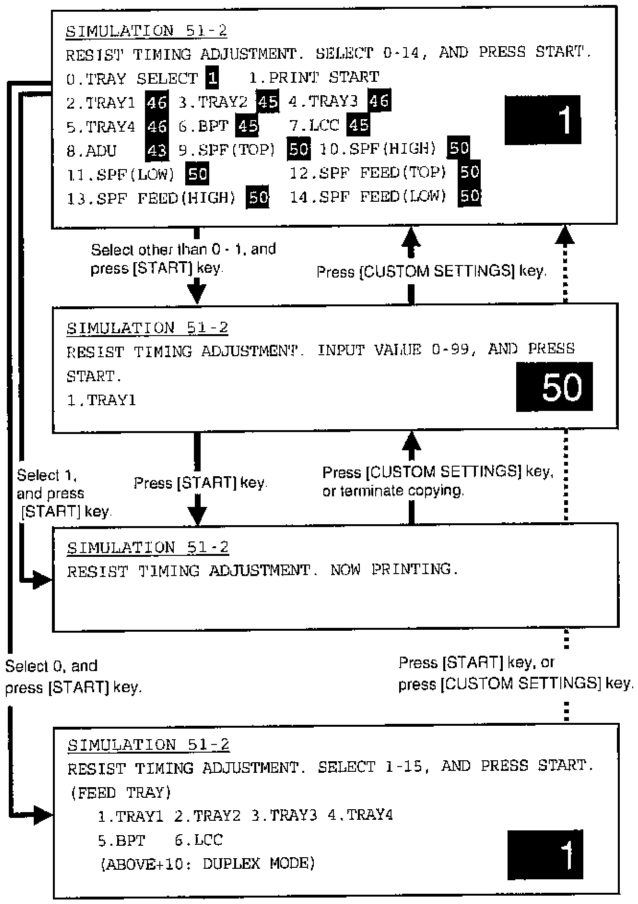
* To select paper (paper feed tray), perform the following procedures.

1) Enter 0 with 10-key.
2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
3) Enter the number corresponding to the paper feed tray to be used with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual feed
6	LCC	LCC

When the total of the above set value (1 - 6) and 10 is entered, the mode is changed to the duplex print mode.

NOTE: When [P] key is pressed after entering the adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.



```
SIMULATION 51-2
RESIST TIMING ADJUSTMENT. SELECT 0-14, AND PRESS START.
0.TRAY SELECT 1    1.PRINT START
2.TRAY1 46 3.TRAY2 45 4.TRAY3 46
5.TRAY4 46 6.BPT 45   7.LCC 45                  1
8.ADU   43 9.SPF(TOP) 50 10.SPF(HIGH) 50
11.SPF(LOW) 50          12.SPF FEED(TOP) 50
13.SPF FEED(HIGH) 50    14.SPF FEED(LOW) 50
```

```
SIMULATION 51-2
RESIST TIMING ADJUSTMENT. INPUT VALUE 0-99, AND PRESS
START.
1.TRAY1                                        50
```

```
SIMULATION 51-2
RESIST TIMING ADJUSTMENT. NOW PRINTING.
```

```
SIMULATION 51-2
RESIST TIMING ADJUSTMENT. SELECT 1-15, AND PRESS START.
(FEED TRAY)
   1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4
   5.BPT   6.LCC
   (ABOVE+10: DUPLEX MODE)                      1
```

Select other than 0 - 1, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 1, and press [START] key.
Press [START] key.
Press [CUSTOM SETTINGS] key, or terminate copying.
Select 0, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.

53

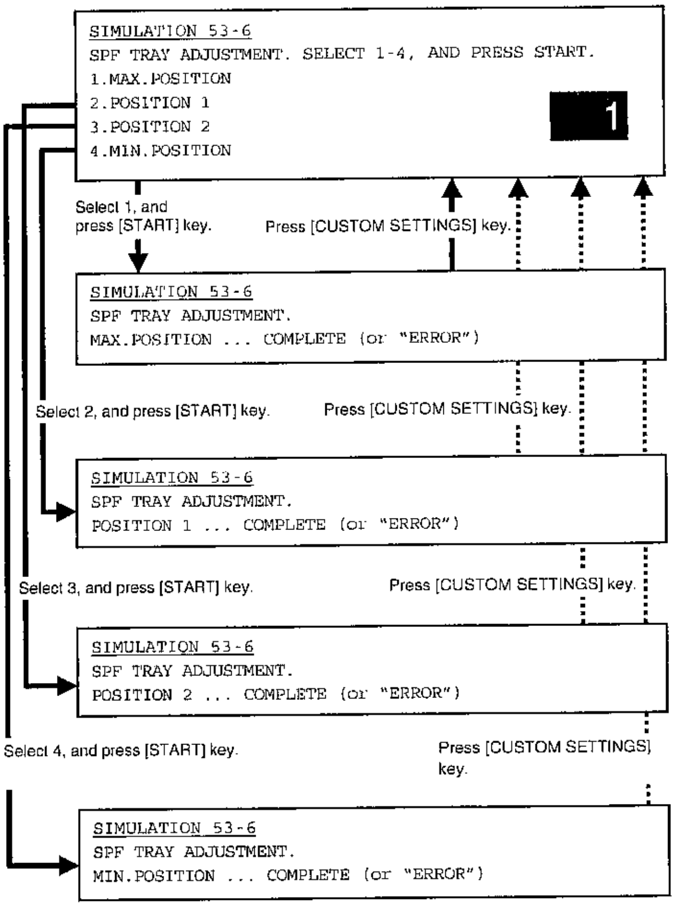
53-6

Purpose	Adjustment
Function (Purpose)	Used to adjust the DSPF width detection level.
Section	
Item	Operation

Operation/Procedure

1) Set the SPF paper feed guide to the max. position.
2) Select "MAX. POSITION" with 10-key.
3) Press [START] key.
   The max. width detection level is recognized.
4) Press [CSUTOM SETTING] key.
5) Set the SPF paper feed guide to A4R size position.
6) Select POSITION 1 with 10-key.
7) Press [START] key.
   The A4R width detection level is recognized.
8) Press [CSUTOM SETTING] key.
9) ▲ Set the SPF paper feed guide to A5R size position.
10) Select POSITION 2 with 10-key.
11) Press [START] key.
    ▲ The A5R width detection level is recognized.
12) Press [CSUTOM SETTING] key.
13) Set the SPF paper feed guide to the min. position.
14) Select "MIN. POSITION" with 10-key.
15) Press [START] key.
    The min. width detection level is recognized.

If the above procedures are not completed normally, ERROR is displayed. When completed normally, COMPLETE is displayed.



```
SIMULATION 53-6
SPF TRAY ADJUSTMENT. SELECT 1-4, AND PRESS START.
1.MAX.POSITION
2.POSITION 1                                    1
3.POSITION 2
4.MIN.POSITION
```

```
SIMULATION 53-6
SPF TRAY ADJUSTMENT.
MAX.POSITION ... COMPLETE (or "ERROR")
```

```
SIMULATION 53-6
SPF TRAY ADJUSTMENT.
POSITION 1 ... COMPLETE (or "ERROR")
```

```
SIMULATION 53-6
SPF TRAY ADJUSTMENT.
POSITION 2 ... COMPLETE (or "ERROR")
```

```
SIMULATION 53-6
SPF TRAY ADJUSTMENT.
MIN.POSITION ... COMPLETE (or "ERROR")
```

Select 1, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 2, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 3, and press [START] key.
Press [CUSTOM SETTINGS] key.
Select 4, and press [START] key.
Press [CUSTOM SETTINGS] key.

53-7

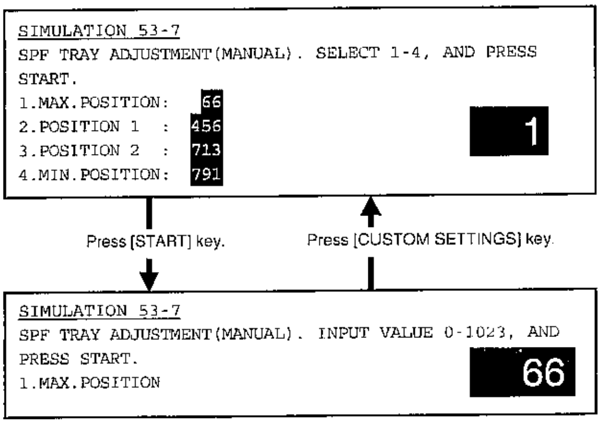
Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to enter the SPF width detection adjustment value.
Section	DSPF
Item	Operation

Operation/Procedure

1) Enter the number corresponding to the set item with 10-key.

Item			Set range	Default
1	MAX. POSITION	Max. width	0 - 1023	66
2	POSITION 1	Adjustment position 1		456
3	POSITION 2	Adjustment position 2		713
4	MIN. POSITION	Min. width		791

2) Press [START] key.
3) Enter the set value with 10key.
4) Press [START] key.



```
SIMULATION 53-7
SPF TRAY ADJUSTMENT(MANUAL). SELECT 1-4, AND PRESS
START.
1.MAX.POSITION:  66
2.POSITION 1  : 456                             1
3.POSITION 2  : 713
4.MIN.POSITION: 791
```

```
SIMULATION 53-7
SPF TRAY ADJUSTMENT(MANUAL). INPUT VALUE 0-1023, AND
PRESS START.
1.MAX.POSITION                                 66
```

Press [START] key.
Press [CUSTOM SETTINGS] key.

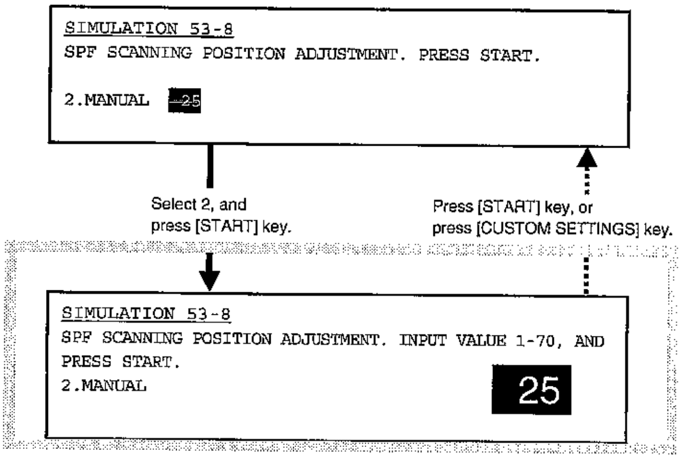
53-8

Purpose	Adjustment
Function (Purpose)	Used to adjust the document scan start position. (Used to adjust the scanner scan position in the SPF mode front scan.)
Section	
Item	

Operation/Procedure

1) Select 2 with 10-key.
2) Press [START] key.
3) Enter the adjustment value with 10key. (1 count: 0.1mm)
4) Press [START] key.

	Item			Set range	Default
⚠	2	MANUAL	Manual feed adjustment (Direct entry of a number)	1 - 70	32



```
SIMULATION 53-8
SPF SCANNING POSITION ADJUSTMENT. PRESS START.

2.MANUAL  25
```

Select 2, and press [START] key.
Press [START] key, or press [CUSTOM SETTINGS] key.
⚠

```
SIMULATION 53-8
SPF SCANNING POSITION ADJUSTMENT. INPUT VALUE 1-70, AND
PRESS START.
2.MANUAL                                          25
```

55

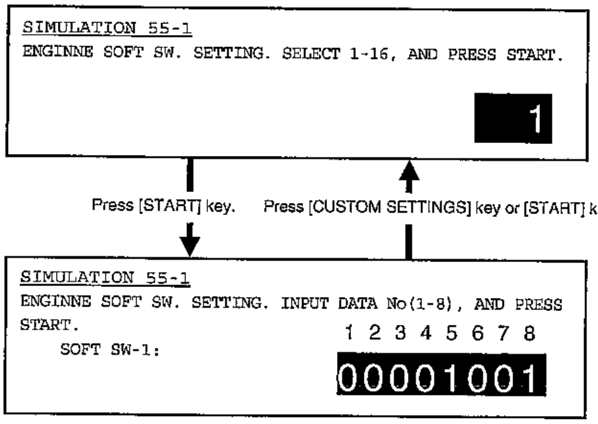
55-1

Purpose	Setting
Function (Purpose)	Used to set the specifications of the engine control operations. (PCU PWB)
Section	
Item	Operation Specifications

Operation/Procedure

This simulation is used to change and check the engine soft SW. Set this setting to the default.

There is no need to change this setting in the market.



```
SIMULATION 55-1
ENGINNE SOFT SW. SETTING. SELECT 1-16, AND PRESS START.

                                                    1
```

```
SIMULATION 55-1
ENGINNE SOFT SW. SETTING. INPUT DATA No(1-8), AND PRESS
START.                              1 2 3 4 5 6 7 8
    SOFT SW-1:
                                    0 0 0 0 1 0 0 1
```

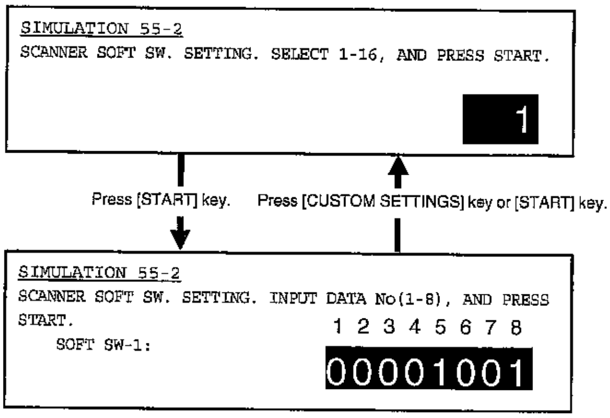
55-2

Purpose	Setting
Function (Purpose)	Used to set the specifications of the scanner control operations. (Scanner control PWB)
Section	
Item	Operation Specifications

Operation/Procedure

This simulation is used to change and check the scanner soft SW. Set this setting to the default.

There is no need to change this setting in the market.



```
SIMULATION 55-2
SCANNER SOFT SW. SETTING. SELECT 1-16, AND PRESS START.

                                                    1
```

```
SIMULATION 55-2
SCANNER SOFT SW. SETTING. INPUT DATA No(1-8), AND PRESS
START.                              1 2 3 4 5 6 7 8
    SOFT SW-1:
                                    0 0 0 0 1 0 0 1
```

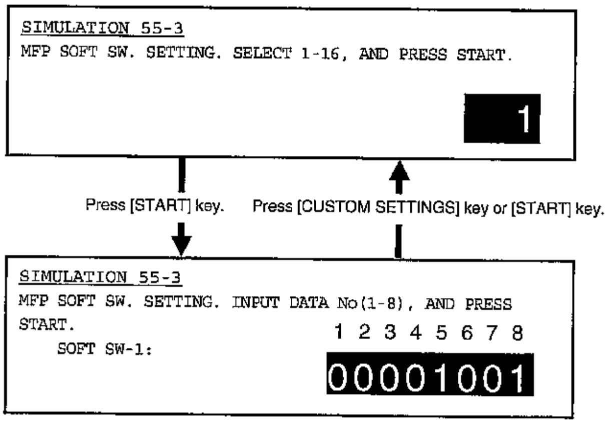
55-3

Purpose	Setting
Function (Purpose)	Used to set the specifications of the controller operations. (MFP control PWB)
Section	
Item	Operation Specifications

Operation/Procedure

This simulation is used to change and check the controller soft SW. Set this setting to the default.

There is no need to change this setting in the market.



```
SIMULATION 55-3
MFP SOFT SW. SETTING. SELECT 1-16, AND PRESS START.

                                                    1
```

```
SIMULATION 55-3
MFP SOFT SW. SETTING. INPUT DATA No(1-8), AND PRESS
START.                              1 2 3 4 5 6 7 8
    SOFT SW-1:
                                    0 0 0 0 1 0 0 1
```

56

56-1

Purpose	Data transfer
Function (Purpose)	Used to transfer the MFP controller data. (Used to repair the PWB.)
Section	MFP controller
Item	Data transfer

Operation/Procedure

1) Select the number corresponding to the data transfer mode with 10-key.

1	ALL (EEPROM, SRAM, FlashROM) → HDD	All the contents of memory are transferred to HDD. (Similar to execution of items 3 and 5.)
2	HDD → ALL (EEPROM, SRAM, FlashROM)	The HDD contents are transferred to all the memories. (Similar to execution of items 4 and 6.)
3	EEPROM → HDD	Transfer from EEPROM to HDD
4	HDD → EEPROM	Transfer from HDD to EEPROM
5	SRAM (+ FAX Memory, + Option Memory) → HDD	Transfer from SRAM to HDD. When, however, the FAX memory or an option memory (for FAX memory) * is installed, the contents of the Fax memory are also transferred to HDD.
6	HDD → SRAM (+ FAX Memory, + Option → Memory)	Transfer from HDD to SRAM. When, however, the FAX memory or an option memory (for FAX memory) * is installed, the contents HDD are transferred to the FAX memory as well as the SRAM.
7	FontROM → HDD	Transfer from the font ROM to HDD

*: When Flash ROM or OP_Flash ROM is not installed, transfer is not made.

2) Press [START] key.

3) The confirmation menu is opened to confirm YES/NO of data transfer. Select one.

1	YES	Data transfer is executed.
2	NO	Data transfer is not executed.

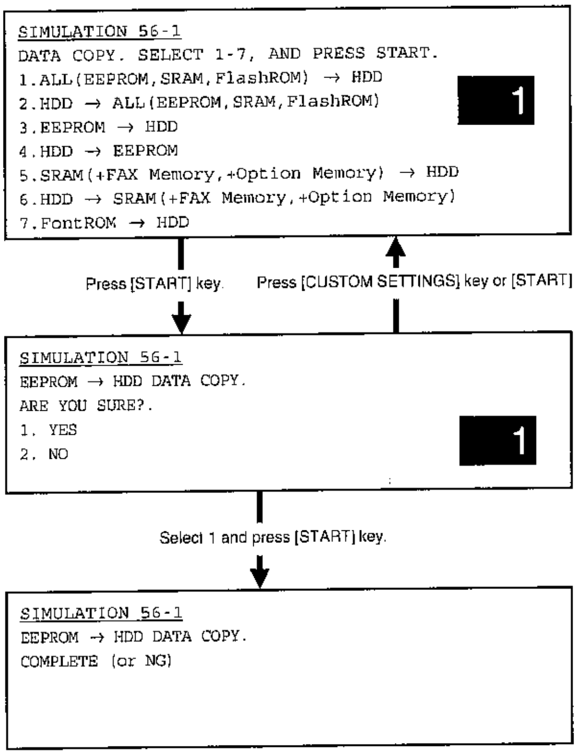
4) Press [START] key.

After completion of transfer, the transfer result is displayed.

If there is no error, the machine is automatically reset after completion of data transfer.

If there is an error, "NG" is displayed. (The machine is not reset.)

When restoring from HDD, fit the configurations of the Flash ROM and the optional Flash ROM at back-up.



```
SIMULATION 56-1
DATA COPY. SELECT 1-7, AND PRESS START.
1.ALL(EEPROM,SRAM,FlashROM) → HDD
2.HDD → ALL(EEPROM,SRAM,FlashROM)
3.EEPROM → HDD
4.HDD → EEPROM
5.SRAM(+FAX Memory,+Option Memory) → HDD
6.HDD → SRAM(+FAX Memory,+Option Memory)
7.FontROM → HDD
```

```
SIMULATION 56-1
EEPROM → HDD DATA COPY.
ARE YOU SURE?.
1. YES
2. NO
```

```
SIMULATION 56-1
EEPROM → HDD DATA COPY.
COMPLETE (or NG)
```

1
Press [START] key.
Press [CUSTOM SETTINGS] key or [START] key.
1
Select 1 and press [START] key.

60

60-1

Purpose	Operation test/Check
Function (Purpose)	Used to check the MFP control (DRAM) operations (read/write).
Section	ICU
Item	Operation

Operation/Procedure

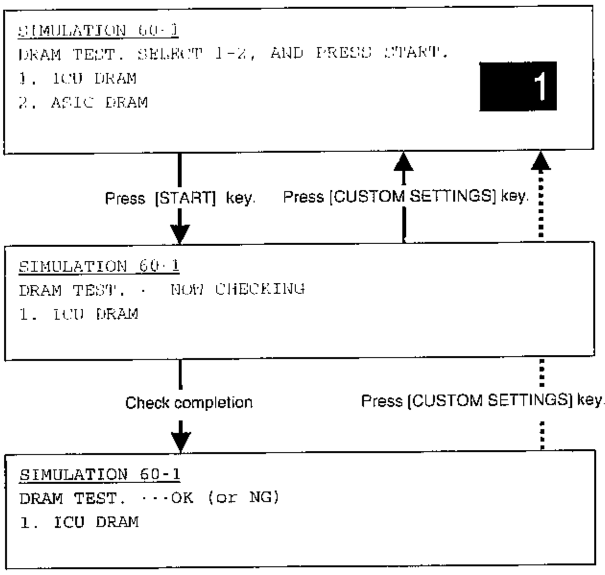
1) Enter the number corresponding to the memory to be checked with 10-key.

1	MFP DRAM	ERDH image memory
2	ASIC DRAM	ASIC image memory

2) Press [START] key.

The memory read/write operation is started.

After starting the operation, "NOW CHECKING" is displayed during checking. When read/write is normally completed, "OK" is displayed. If an error occurs, "NG" is displayed.



```
SIMULATION 60-1
DRAM TEST. SELECT 1-2, AND PRESS START.
1. ICU DRAM
2. ASIC DRAM
```

```
SIMULATION 60-1
DRAM TEST. ·  NOW CHECKING
1. ICU DRAM
```

```
SIMULATION 60-1
DRAM TEST. ···OK (or NG)
1. ICU DRAM
```

61

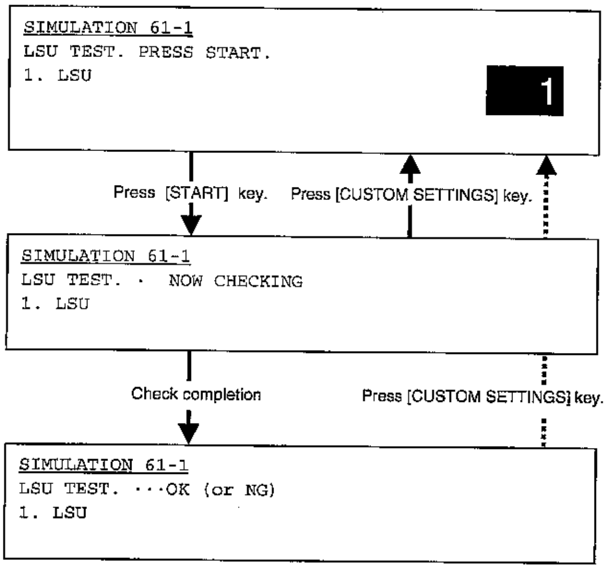
61-1

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the scanner (write) unit (LSU).
Section	Scanner (write) unit (LSU)
Item	Operation

Operation/Procedure

Used to check if the LSU delivers output of the sync signal (HSYNC/) or not.

"NOW CHECKING" is displayed during checking. When the test is normally completed, "OK" is displayed. If an error occurs, "NG" is displayed.


Press [START] key.
Press [CUSTOM SETTINGS] key.
Check completion
Press [CUSTOM SETTINGS] key.

```
SIMULATION 61-1
LSU TEST. PRESS START.
1. LSU                                   1
```

```
SIMULATION 61-1
LSU TEST. · NOW CHECKING
1. LSU
```

```
SIMULATION 61-1
LSU TEST. ···OK (or NG)
1. LSU
```

61-2

Purpose	Adjustment
Function (Purpose)	Used to adjust the laser power (absolute value) in the copy mode.
Section	Scanner (write) unit (LSU)
Item	Operation

Operation/Procedure

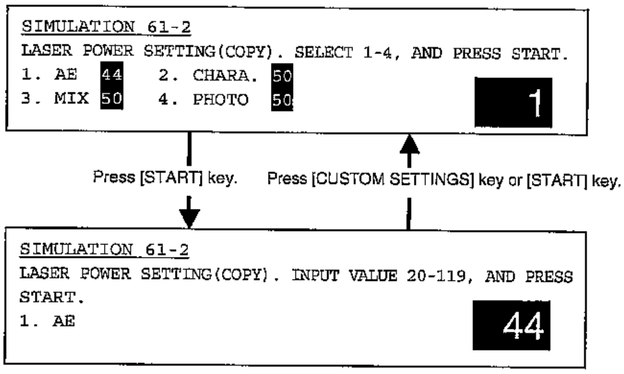
1) Select the number corresponding to the adjustment mode with 10-key.

⚠

Item			Set range	Default	
				AR-M550N/U, AR-M620N/U	AR-M700N/U
1	AE	Auto exposure mode	32 - 82	44	38
2	CHARA.	Text mode		50	43
3	MIX	Text/Photo mode		50	43
4	PHOTO	Photo mode		50	43

2) Press [START] key.
3) Enter the adjustment value with 10-key.
4) Enter [START] key.

NOTE: Be sure to set the default value. If not, a trouble may occur in the LSU.


Press [START] key.
Press [CUSTOM SETTINGS] key or [START] key.

```
SIMULATION 61-2
LASER POWER SETTING(COPY). SELECT 1-4, AND PRESS START.
1. AE   44   2. CHARA. 50
3. MIX  50   4. PHOTO  50                1
```

```
SIMULATION 61-2
LASER POWER SETTING(COPY). INPUT VALUE 20-119, AND PRESS
START.
1. AE                                    44
```

61-3

Purpose	Adjustment
Function (Purpose)	Used to adjust the laser power (absolute value) in the FAX mode.
Section	Scanner (write) unit (LSU)
Item	Operation

Operation/Procedure

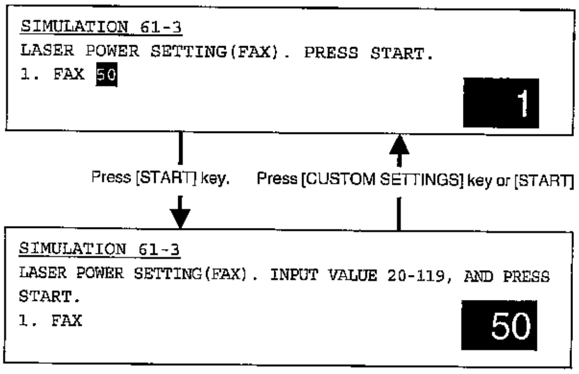
1) Select the number corresponding to the adjustment mode with 10-key.
2) Press [START] key.
3) Enter the adjustment value with 10-key.

⚠

Set range	32 - 82
Default	50 (AR-M550N/U, AR-M620N/U) 38 (AR-M700N/U)

4) Enter [START] key.

NOTE: Be sure to set the default value. If not, a trouble may occur in the LSU.


Press [START] key.
Press [CUSTOM SETTINGS] key or [START] key.

```
SIMULATION 61-3
LASER POWER SETTING(FAX). PRESS START.
1. FAX 50                                1
```

```
SIMULATION 61-3
LASER POWER SETTING(FAX). INPUT VALUE 20-119, AND PRESS
START.
1. FAX                                   50
```

61-4

Purpose	Adjustment
Function (Purpose)	Used to adjust the laser power (absolute value) in the printer mode.
Section	Scanner (write) unit (LSU)
Item	Operation

Operation/Procedure

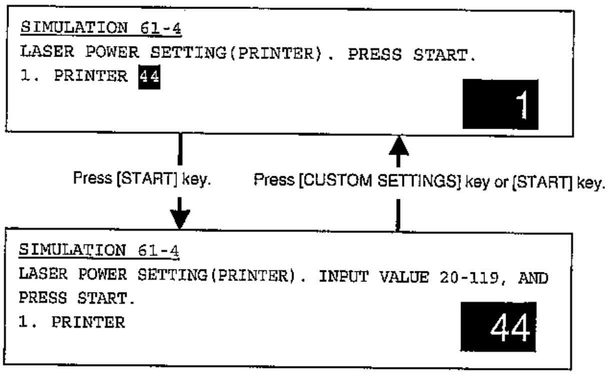
1) Select the number corresponding to the adjustment mode with 10-key.
2) Press [START] key.
3) Enter the adjustment value with 10-key.

⚠

Set range	32 - 82
Default	44 (AR-M550N/U, AR-M620N/U) 38 (AR-M700N/U)

4) Enter [START] key.

NOTE: Be sure to set the default value. If not, a trouble may occur in the LSU.


Press [START] key.
Press [CUSTOM SETTINGS] key or [START] key.

```
SIMULATION 61-4
LASER POWER SETTING(PRINTER). PRESS START.
1. PRINTER 44                            1
```

```
SIMULATION 61-4
LASER POWER SETTING(PRINTER). INPUT VALUE 20-119, AND
PRESS START.
1. PRINTER                               44
```

62

62-1 [illegible]

Purpose	Data clear
Function (Purpose)	Used to format the hard disk.
Section	MFP controller (HDD)
Item	Clear

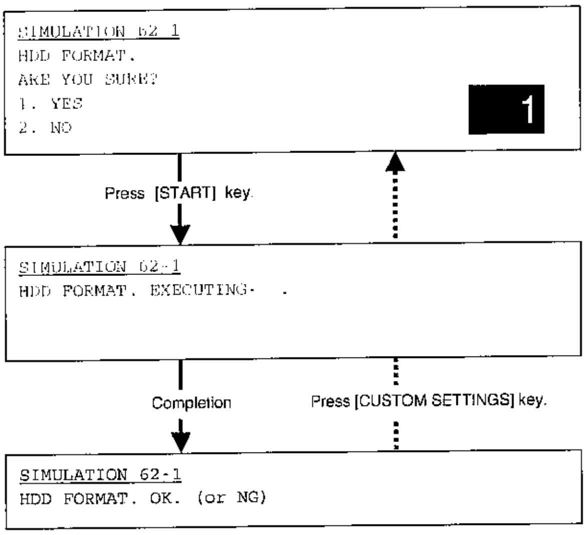
Operation/Procedure

1) Select YES/NO of hard disk format.

1	YES	Execution
2	NO	Cancel

2) Press [START] key.

During formatting, "EXECUTING" is displayed. When formatting is completed normally, "OK" is displayed. If not, "NG" is displayed.



```
SIMULATION 62-1
HDD FORMAT.
ARE YOU SURE?
1. YES
2. NO
```

```
SIMULATION 62-1
HDD FORMAT. EXECUTING・ .
```

```
SIMULATION 62-1
HDD FORMAT. OK. (or NG)
```

62-2 [illegible]

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the hard disk (read/write). (Only in the model with a disk installed) (Partial check)
Section	MFP controller (HDD)
Item	Operation

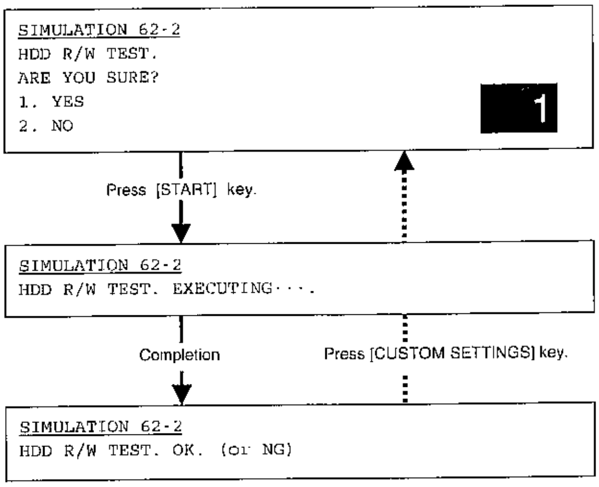
Operation/Procedure

1) Select YES/NO of hard disk read/write check.

1	YES	Execution
2	NO	Cancel

2) Press [START] key.

During testing, "EXECUTING" is displayed. When test is completed normally, "OK" is displayed. If not, "NG" is displayed.



```
SIMULATION 62-2
HDD R/W TEST.
ARE YOU SURE?
1. YES
2. NO
```

```
SIMULATION 62-2
HDD R/W TEST. EXECUTING・・・.
```

```
SIMULATION 62-2
HDD R/W TEST. OK. (or NG)
```

62-3 [illegible]

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the hard disk (read/write). (All areas check)
Section	MFP controller (HDD)
Item	Operation

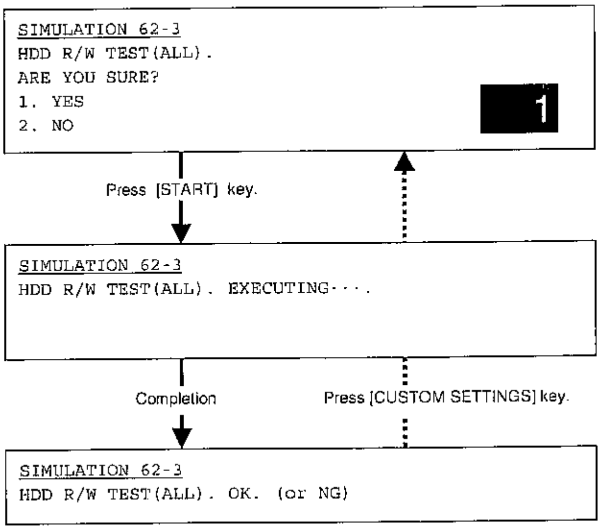
Operation/Procedure

1) Select YES/NO of hard disk read/write check.

1	YES	Execution
2	NO	Cancel

2) Press [START] key.

During testing, "EXECUTING" is displayed. When test is completed normally, "OK" is displayed. If not, "NG" is displayed.



```
SIMULATION 62-3
HDD R/W TEST(ALL).
ARE YOU SURE?
1. YES
2. NO
```

```
SIMULATION 62-3
HDD R/W TEST(ALL). EXECUTING・・・.
```

```
SIMULATION 62-3
HDD R/W TEST(ALL). OK. (or NG)
```

62-6 [illegible]

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the hard disk. (The self diag operation of the SMART function is executed.)
Section	MFP controller (HDD)
Item	Clear

Operation/Procedure

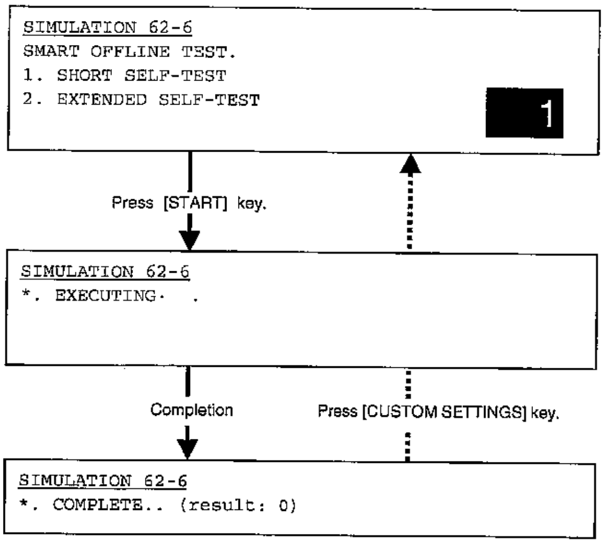
1) Select the number corresponding to the self diag check mode.

1	SHORT SELF-TEST	Partial test
2	EXTENDED SELF-TEST	All areas test

2) Press [START] key.

During the self diag operation, "EXECUTING" is displayed.

If the self diag is completed normally, "0" is displayed. If not, any value but 0 is displayed.



```
SIMULATION 62-6
SMART OFFLINE TEST.
1. SHORT SELF-TEST
2. EXTENDED SELF-TEST                    1
```

```
SIMULATION 62-6
*. EXECUTING·  .
```

```
SIMULATION 62-6
*. COMPLETE.. (result: 0)
```

* = SHORT SELF-TEST, EXTENDED SELF-TEST

62-7

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the hard disk. (The result of the self diag operation of the SMART function is printed out.)
Section	MFP controller (HDD)
Item	Clear

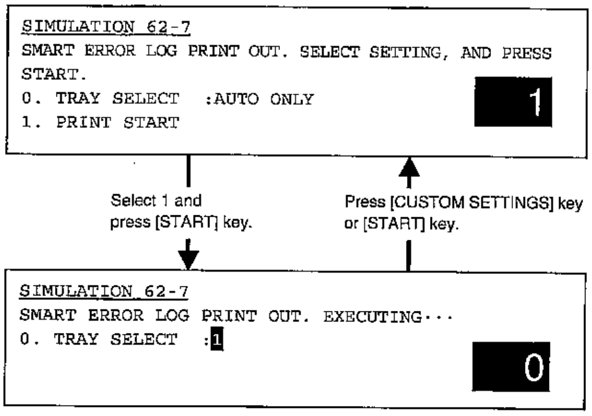
Operation/Procedure

1) Enter 1 with 10-key.

0	TRAY SELECT	Tray select auto only (Selection inhibited)
1	PRINT START	Print start

2) Press [START] key.

The result of the hard disk operation check (the self diag operation of the SMART function) is printed out.



```
SIMULATION 62-7
SMART ERROR LOG PRINT OUT. SELECT SETTING, AND PRESS
START.
0. TRAY SELECT   :AUTO ONLY                     1
1. PRINT START
```

```
SIMULATION 62-7
SMART ERROR LOG PRINT OUT. EXECUTING···
0. TRAY SELECT   :1
                                                0
```

62-8

Purpose	Data clear
Function (Purpose)	Used to format the hard disk (the system area excluded).
Section	MFP controller (HDD)
Item	Clear

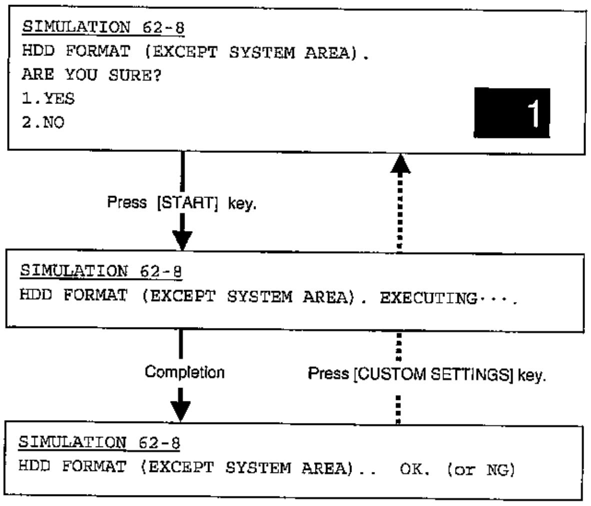
Operation/Procedure

1) Select YES/NO of hard disk (the system area excluded) format.

1	YES	Execution
2	NO	Cancel

2) Press [START] key.

During formatting, "EXECUTING" is displayed. When formatting is completed normally, "OK" is displayed. If not, "NG" is displayed.



```
SIMULATION 62-8
HDD FORMAT (EXCEPT SYSTEM AREA).
ARE YOU SURE?
1.YES
2.NO                                            1
```

```
SIMULATION 62-8
HDD FORMAT (EXCEPT SYSTEM AREA). EXECUTING···.
```

```
SIMULATION 62-8
HDD FORMAT (EXCEPT SYSTEM AREA)..  OK. (or NG)
```

62-10

Purpose	Data clear
Function (Purpose)	Used to delete a job complete list (also to delete job log data)
Section	MFP controller (HDD)
Item	Clear

Operation/Procedure

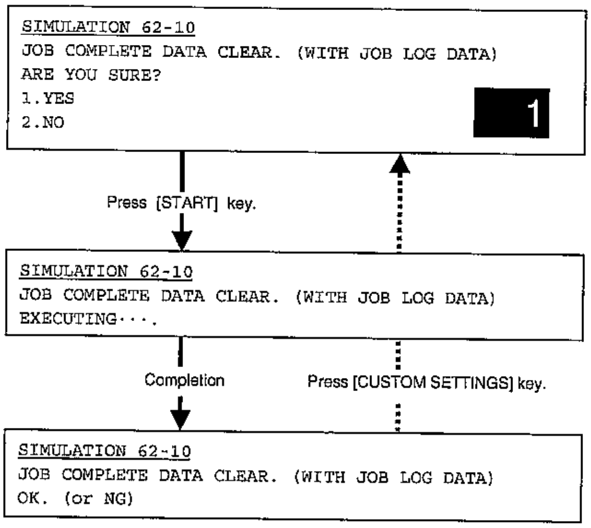
1) Select YES/NO of deleting the job complete list.

1	YES	Execution
2	NO	Cancel

2) Press [START] key.

During formatting, "EXECUTING" is displayed. When formatting is completed normally, "OK" is displayed. If not, "NG" is displayed.

NOTE: When executed, this function also deletes the complete queues of E-MAIL, FAX and IFAX, reservation data associated with the image send function, bulletin board data, and confidential data.



```
SIMULATION 62-10
JOB COMPLETE DATA CLEAR. (WITH JOB LOG DATA)
ARE YOU SURE?
1.YES
2.NO                                            1
```

```
SIMULATION 62-10
JOB COMPLETE DATA CLEAR. (WITH JOB LOG DATA)
EXECUTING···.
```

```
SIMULATION 62-10
JOB COMPLETE DATA CLEAR. (WITH JOB LOG DATA)
OK. (or NG)
```

62-11

Purpose	Data clear
Function (Purpose)	Used to delete document filing data. (The management area (standard folder, user folder) is cleared.)
Section	MFP controller (HDD)
Item	Clear

Operation/Procedure

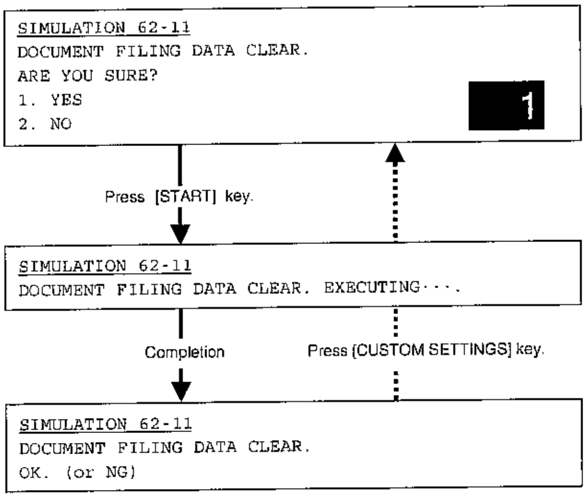
1) Select YES/NO of deleting the document filing data.

1	YES	Execution
2	NO	Cancel

2) Press [START] key.

During formatting, "EXECUTING" is displayed. When formatting is completed normally, "OK" is displayed. If not, "NG" is displayed.

NOTE: When executed, this function internally executes the same function as SIM66-10;deleting reservation data, bulletin board data, and confidential data.



```
SIMULATION 62-11
DOCUMENT FILING DATA CLEAR.
ARE YOU SURE?
1. YES
2. NO                                   1
```

```
SIMULATION 62-11
DOCUMENT FILING DATA CLEAR. EXECUTING···.
```

```
SIMULATION 62-11
DOCUMENT FILING DATA CLEAR.
OK. (or NG)
```

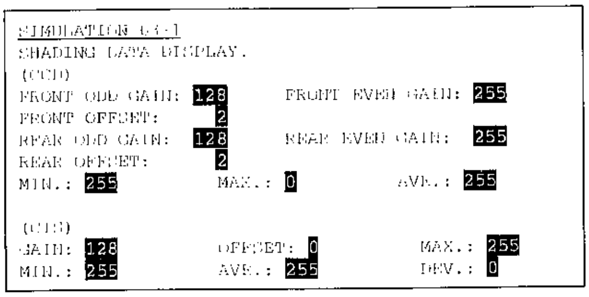
63

63-1

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the result of shading correction. (The shading correction data are displayed.)
Section	Optical (Image scanning)
Item	Operation

Operation/Procedure

CCD data	
FRONT ODD GAIN	Front odd-number pixel gain adjustment value
FRONT EVEN GAIN	Front even-number pixel gain adjustment value
FRONT OFFSET	Front black difference
REAR ODD GAIN	Rear odd-number pixel gain adjustment value
REAR EVEN GAIN	Rear even-number pixel gain adjustment value
REAR OFFSET	Rear black difference
MIN	All pixels min. value
MAX	All pixels max. value
AVE	All pixels average value
CIS data (Only when DSPF installed.)	
GAIN	Gain adjustment value
MAX	Pixel max.
MIN	Pixel min.
AVE	Pixel average
OFFSET	Black difference
DEV	Standard deviation



```
SIMULATION 63-1
SHADING DATA DISPLAY.
(CCD)
FRONT ODD GAIN:  128      FRONT EVEN GAIN:  255
FRONT OFFSET:      2
REAR ODD GAIN:   128      REAR EVEN GAIN:   255
REAR OFFSET:       2
MIN.: 255           MAX.: 0           AVE.: 255

(CIS)
GAIN: 128           OFFSET: 0           MAX.: 255
MIN.: 255           AVE.: 255           DEV.: 0
```

63-2

Purpose	Adjustment
Function (Purpose)	Used to execute shading.
Section	Optical (Image scanning)
Item	Operation

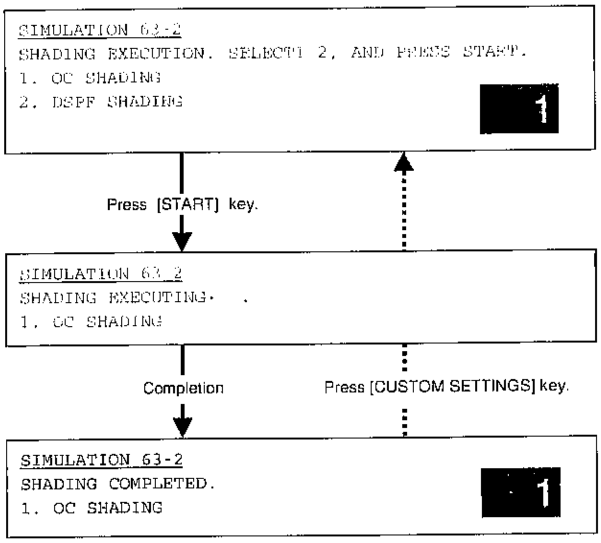
Operation/Procedure

1) Enter the number corresponding to the shading mode to be executed.

1	OC SHADING	OC analog level correction and shading correction (Document table mode)
2	DSPF SHADING	DSPF analog level correction and shading correction

2) Press [START] key.

During execution, "EXECUTING" is displayed. When execution is completed normally, "COMPLETED" is displayed.



```
SIMULATION 63-2
SHADING EXECUTION. SELECT1 2, AND PRESS START.
1. OC SHADING
2. DSPF SHADING                              1
```

```
SIMULATION 63-2
SHADING EXECUTING·  .
1. OC SHADING
```

```
SIMULATION 63-2
SHADING COMPLETED.
1. OC SHADING                                1
```

63-7

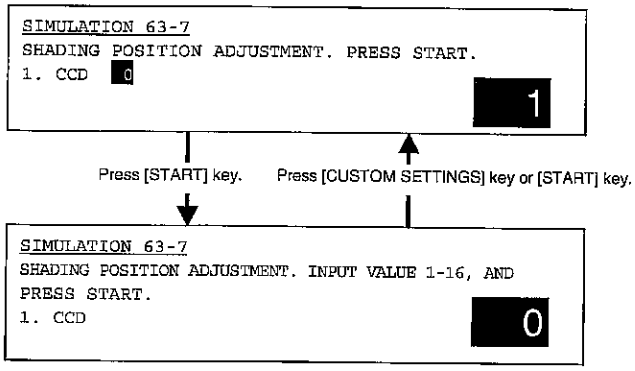
Purpose	Adjustment
Function (Purpose)	Used to adjust the white plate scan start position for shading. (Document table mode)
Section	Laser (Exposure)
Item	Operation

Operation/Procedure

1) Enter 1 with 10-key.
2) Press [START] key.
3) Enter the adjustment value with 10-key.
4) Press [START] key.

When a shading error occurs, this adjustment value is changed.

Item			Set range	Default
1	CCD	CCD scan	1 - 16	6



SIMULATION 63-7
SHADING POSITION ADJUSTMENT. PRESS START.
1. CCD 0
1

SIMULATION 63-7
SHADING POSITION ADJUSTMENT. INPUT VALUE 1-16, AND PRESS START.
1. CCD
0

64

64-1

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the printer section (self-print operation), (The print pattern, the paper feed mode, the print mode, the print quantity, and the density can be optionally set.)
Section	
Item	Operation

Operation/Procedure

(Various print patterns output) (Table 1)

1) Select PRINT PATTERN with 10-key.
2) Enter the number corresponding to the print pattern to be printed with 10-key.
3) Press [START] key.
4) Select PRINT START with 10-key.
5) Press [START] key.

(Print condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

1) Select TRAY SELECT with 10-key.
2) Press [START] key.
3) Enter the number corresponding to the paper feed tray of the target paper with 10-key.
4) Press [START] key. (The paper feed tray is selected.)

* To adjust the print density, perform the following procedures.

1) Select DENSITY with 10-key.
2) Enter the adjustment value with 10-key.
3) Press [START] key.

* To set the print quantity, perform the following procedures.

1) Select MULTI with 10-key.
2) Enter the print quantity with 10-key.
3) Press [START] key.

* To set the print quality mode, perform the following procedures.

1) Select MODE with 10-key.
2) Enter the number corresponding to the print quality mode with 10-key.
3) Press [START] key.

* To set the print level, perform the following procedures.

1) Select LEVEL with 10-key.
2) Enter the adjustment value with 10-key.
3) Press [START] key.

NOTE: In some print patterns, changing the level may not change the picture quality.

* To set duplex/simplex print, perform the following procedures.

1) Select DUPLEX with 10-key.
2) Enter the number corresponding to the operation mode with 10-key.
3) Press [START] key.

(Table 1)

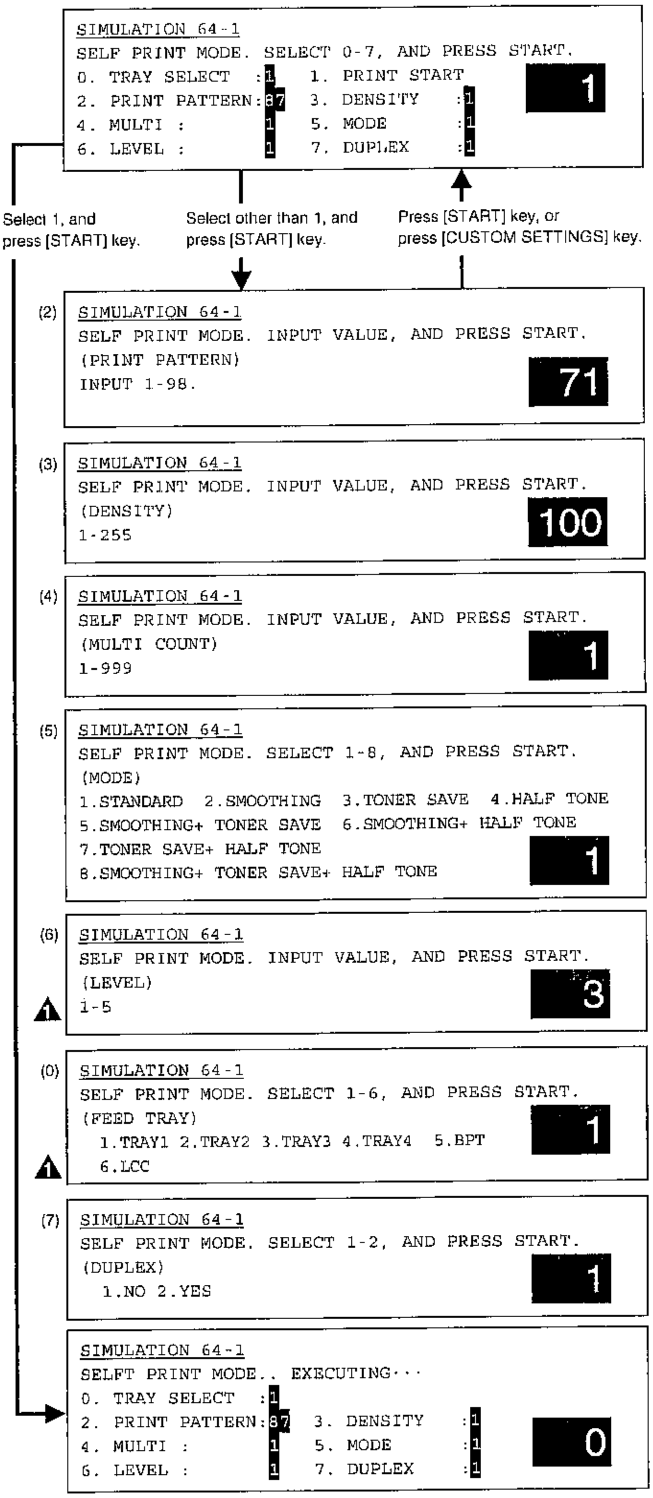
0	TRAY SELECT 1. TRAY1 2. TRAY2 3. TRAY3 4. TRAY4 5. BPT 6. LCC	Paper feed tray 1: Tray 1 2: Tray 2 3: Tray 3 4: Tray 4 5: Manual feed 6: LCC
1	PRINT START	Print execution (Printing of the set data is executed.)
2	PRINT PATTERN	Print pattern (Note 1)
3	DENSITY	Graphic density (Valid only when No. 79, 80 or 84 is selected.)
4	MULTI	Print quantity
5	MODE 1. STANDARD 2. SMOOTHING 3. TONER SAVE 4. HALF TONE 5. SMOOTHING + TONER SAVE 6. SMOOTHING + HALF TONE 7. TONER SAVE + HALF TONE 8. SMOOTHING + TONER SAVE + HALF TONE	Print mode 1. Standard 2. Smoothing ON 3. Smoothing ON 3. Toner save ON 4. Half tone ON 5. Smoothing + toner save 6. Smoothing + half tone 7. Toner save + half tone 8. Smoothing + toner save + half tone
6	LEVEL	(Parameter of print image process)
7	DUPLEX 1. NO 2. YES	Duplex 0: NO (Simplex) 1: YES (Duplex)

(Note 1) Print pattern

NO	ENGINE PATTERN	CONTROLLER	PATTERN
1	○		For off-center adjustment
2	○		Main scanning direction 1 by 5
3	○		Main scanning direction 1mm-pitch
4	○		Main scanning direction 3 by 3
5	○		Sub scanning direction 1 by 1
6	○		Sub scanning direction 1 by 5
7	○		Sub scanning direction 2 by 4
8	○		Sub scanning direction 3 by 3
9	○		Right oblique 1 by 2
10	○		Right oblique 1 by 5
11	○		Right oblique 2 by 4
12	○		Right oblique 3 by 3
13	○		Left oblique 1 by 2
14	○		Left oblique 1 by 5
15	○		Left oblique 2 by 4
16	○		Left oblique 3 by 3
17	○		Dot 1 by 1
18	○		Dot 3 by 3
19	○		Dot
20	○		Solid black
21	○		Main scanning direction 1 by 1
22	○		Main scanning direction 5 by 1
23	○		Main scanning direction 4 by 2
24	○		Main scanning direction 3 by 3
25	○		Sub scanning direction 1 by 1
26	○		Sub scanning direction 5 by 1
27	○		Sub scanning direction 4 by 2
28	○		Sub scanning direction 3 by 3
29	○		Right oblique 2 by 1
30	○		Right oblique 5 by 1
31	○		Right oblique 4 by 2
32	○		Right oblique 3 by 3

NO	ENGINE PATTERN	CONTROLLER	PATTERN
33	○		Left oblique 2 by 1
34	○		Left oblique 5 by 1
35	○		Left oblique 4 by 2
36	○		Left oblique 3 by 3
37	○		Dot 1 by 1
38	○		Dot 3 by 3
39	○		Dot
40	○		Solid white
50		○	All surface 1 by 1 (Vertical)
51		○	All surface 1 by 1 (Horizontal)
52		○	All surface 1 by 2 (Vertical)
53		○	All surface 1 by 2 (Horizontal)
54		○	All surface 1 by 3 (Vertical)
55		○	All surface 1 by 3 (Horizontal)
56		○	All surface 1 by 4 (Vertical)
57		○	All surface 1 by 4 (Horizontal)
58		○	All surface 1 by 5 (Vertical)
59		○	All surface 1 by 5 (Horizontal)
60		○	All surface 2 by 2 (Vertical)
61		○	All surface 2 by 2 (Horizontal)
62		○	All surface 2 by 3 (Vertical)
63		○	All surface 2 by 3 (Horizontal)
64		○	All background
65		○	Special pattern
66		☐	For every other 1 block width 128 pixels/ 32 gradations
67		☐	For every other 1 block width 128 pixels/ 16 gradations
68		☐	For every other 1 block width 128 pixels/ 8 gradations
69		○	1-dot pattern
70		○	Print adjustment pattern with scale (Vertical)
71		○	Grid pattern
72		○	Slant line 45 degrees
73		○	Slant line 26.6 degrees
74		○	Slant line 63.4 degrees
75		○	ID/BG pattern
76		○	Dot pattern 12.5%
77		○	Dot pattern 28%
78		○	Dot pattern 50%
79		☐	All surface effort diffusion background
80		○	All surface dither process background
81		○	For every other 1 block width 128 pixels/ 32 gradations
82		○	For every other 1 block width 128 pixels/ 16 gradations
83		○	For every other 1 block width 128 pixels/ 8 gradations
84		○	Memory check pattern
85		○	Cleaning check pattern
86		○	Offset check pattern
87		○	Test B image (For aging)
88		○	6% printer chart
89		○	5% printer chart
90			Toner quantity measuring chart
91			Radiation chart
98			Data printing

☐: Error diffusion process



```
SIMULATION 64-1
SELF PRINT MODE. SELECT 0-7, AND PRESS START.
0. TRAY SELECT   :1    1. PRINT START          1
2. PRINT PATTERN:87    3. DENSITY      :1
4. MULTI :        1    5. MODE         :1
6. LEVEL :        1    7. DUPLEX       :1
```

Select 1, and press [START] key.

Select other than 1, and press [START] key.

Press [START] key, or press [CUSTOM SETTINGS] key.

(2)

```
SIMULATION 64-1
SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(PRINT PATTERN)
INPUT 1-98.                                   71
```

(3)

```
SIMULATION 64-1
SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(DENSITY)
1-255                                        100
```

(4)

```
SIMULATION 64-1
SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(MULTI COUNT)
1-999                                          1
```

(5)

```
SIMULATION 64-1
SELF PRINT MODE. SELECT 1-8, AND PRESS START.
(MODE)
1.STANDARD  2.SMOOTHING  3.TONER SAVE  4.HALF TONE
5.SMOOTHING+ TONER SAVE  6.SMOOTHING+ HALF TONE
7.TONER SAVE+ HALF TONE
8.SMOOTHING+ TONER SAVE+ HALF TONE             1
```

(6)

```
SIMULATION 64-1
SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(LEVEL)
1-5                                            3
```

(0)

```
SIMULATION 64-1
SELF PRINT MODE. SELECT 1-6, AND PRESS START.
(FEED TRAY)
 1.TRAY1 2.TRAY2 3.TRAY3 4.TRAY4  5.BPT        1
 6.LCC
```

(7)

```
SIMULATION 64-1
SELF PRINT MODE. SELECT 1-2, AND PRESS START.
(DUPLEX)
 1.NO 2.YES                                    1
```

```
SIMULATION 64-1
SELFT PRINT MODE.. EXECUTING···
0. TRAY SELECT   :1
2. PRINT PATTERN:87    3. DENSITY      :1
4. MULTI :        1    5. MODE         :1      0
6. LEVEL :        1    7. DUPLEX       :1
```

65

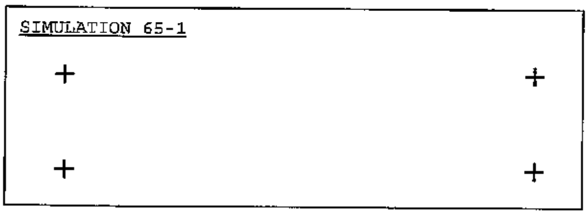
65-1

Purpose	Adjustment
Function (Purpose)	Used to adjust the touch panel (LCD display section) detection position.
Section	Operation (Display/Operation key)
Item	

Operation/Procedure

Touch the four cross marks (+) sequentially. The coordinates of pressed positions are set.

When the coordinates setting is completed normally, the display turns gray. When all the four points are set, the display returns to the normal state.



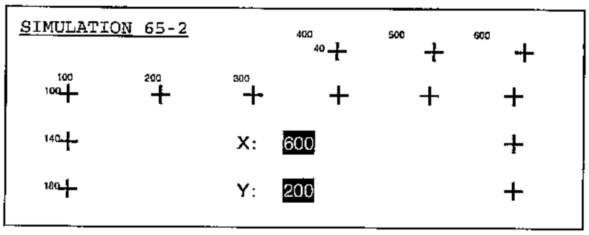
SIMULATION 65-1

65-2

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the result of the touch panel (LCD display) detection position adjustment. (The coordinates are displayed.)
Section	Operation (Display/Operation key)
Item	

Operation/Procedure

When the touch panel is touched, the X and Y coordinate values of the touched point and the coordinate values of the specified point are displayed. The coordinate values set with SIM 65-1 are used as the reference.



SIMULATION 65-2

X: 600

Y: 200

66

66-1

Purpose	Setting
Function (Purpose)	Used to change and check the FAX soft switch functions. (Used to change and check the functions provided for the FAX soft switches.)
Section	FAX
Item	

Operation/Procedure

Setting of soft switches other than SW1 can be changed and checked.

1) Enter the soft switch number to be checked or changed with 10-key.

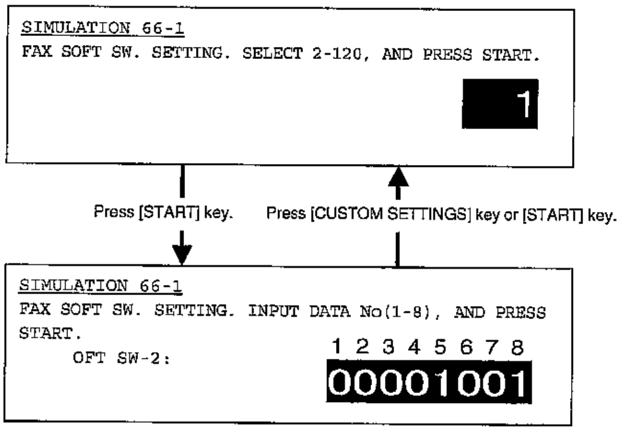
   The current set state is displayed.

2) Enter the number corresponding to the bit to be changed with 10-key.

   (Example) When the bit of 5 is to be changed, enter 5.

   The set value of 1/0 is alternatively changed every time when the target key is pressed.

3) After completion of setting of all the bits, press [START] key.



SIMULATION 66-1

FAX SOFT SW. SETTING. SELECT 2-120, AND PRESS START.

1

Press [START] key.

Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 66-1

FAX SOFT SW. SETTING. INPUT DATA No(1-8), AND PRESS START.

OFT SW-2:

1 2 3 4 5 6 7 8

00001001

66-2

Purpose	Data clear
Function (Purpose)	Used to clear the FAX soft switch function data and to set to the default. (Excluding the adjustment values.)
Section	FAX
Item	Data

Operation/Procedure

1) Set the destination code with 10-key.

Japan	0 0 0 0 0 0 0 0	Finland	0 0 1 1 1 1 0 0
U.S.A.	1 0 1 1 0 1 0 1	Norway	1 0 0 0 0 0 1 0
Australia	0 0 0 0 1 0 0 1	Denmark	0 0 1 1 0 0 0 1
U.K.	1 0 1 1 0 1 0 0	Netherlands	0 1 1 1 1 0 1 1
France	0 0 1 1 1 1 0 1	Italy	0 1 0 1 1 0 0 1
Germany	0 0 0 0 0 1 0 0	Switzerland	1 0 1 0 0 1 1 0
Sweden	1 0 1 0 0 1 0 1	Austria	0 0 0 0 1 0 1 0
Newzealand	0 1 1 1 1 1 1 0	Indonesia	0 1 0 1 0 1 0 0
China	0 0 1 0 0 1 1 0	Thailand	1 0 0 1 0 0 1
Singapore	1 0 0 1 1 1 0 0	Malaysia	0 1 1 0 1 1 0 0
TW	1 1 1 1 1 1 1 0	India	0 1 0 1 0 0 1 1
Other1	1 1 1 1 1 1 0 1	Philippines	1 0 0 0 1 0 0 1
Other2	1 1 1 1 1 1 0 0	Hongkong	0 1 0 1 0 0 0 0
Ohter3	1 1 1 1 1 0 1 1		

The codes other than the above are recognized as Japan.

2) Press [START] key.

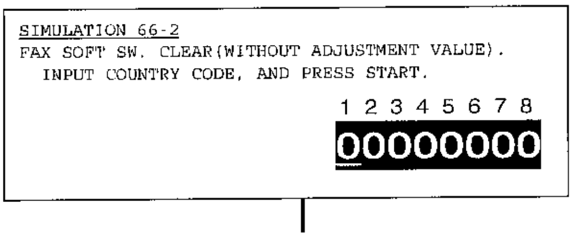
3) The confirmation menu of YES/NO of clear is displayed. Select one.

1	YES	FAX soft SW is cleared.
2	NO	Not cleared.

4) Press [START] key.

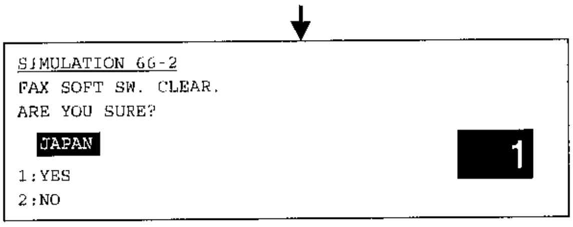
The soft switch (except for the adjustment values) is cleared according to the destination selected in procedure 1).

NOTE: When the FAX BOX is not installed, initialization including the adjustment value is performed. (The adjustment value is stored in the FAX BOX.)



```
SIMULATION 66-2
FAX SOFT SW. CLEAR(WITHOUT ADJUSTMENT VALUE).
  INPUT COUNTRY CODE, AND PRESS START.
                              1 2 3 4 5 6 7 8
                              00000000
```

Press [START] key.



```
SIMULATION 66-2
FAX SOFT SW. CLEAR.
ARE YOU SURE?
 JAPAN                                   1
1:YES
2:NO
```

66-3

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the FAX PWB memory (read/write). (This adjustment is required when the PWB is replaced with a new one.)
Section	FAX
Item	Data

Operation/Procedure

1) Enter the number corresponding to the memory to be checked with 10-key.
2) Press [START] key.

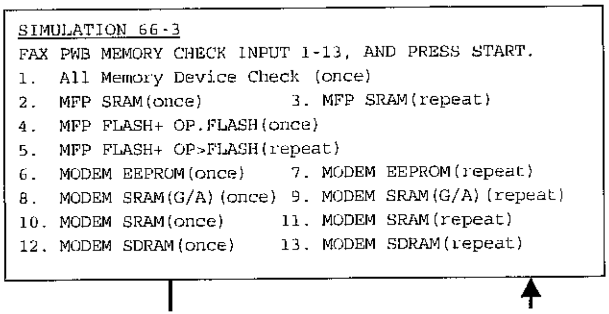
In the case of All, all memories are checked only once.

Check connection wire list	
NO CHECK	Not checked yet.
CHECKING	Checking
OK	Check complete OK
NG	Check complete NG

The error address or the data line is displayed individually.

Target memory of check	
MFP SRAM	SRAM
MFP FLASH	FLASH ROM
MFP OP.FLASH	
MODEM EEPROM	
MODEM SRAM (G/A)	
MODEM SRAM	
MODEM SDRAM	

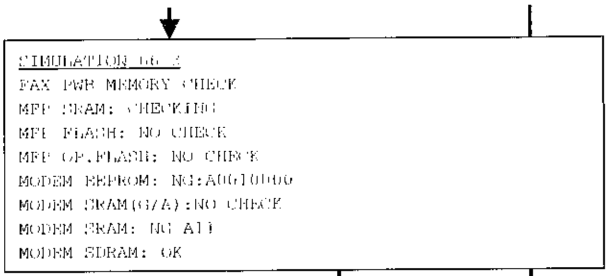
When "repeat" is selected, the operation is repeated until the result is "NG" or [CUSTOMSETTING" is pressed.



```
SIMULATION 66-3
FAX PWB MEMORY CHECK INPUT 1-13, AND PRESS START.
1.  All Memory Device Check (once)
2.  MFP SRAM(once)          3. MFP SRAM(repeat)
4.  MFP FLASH+ OP.FLASH(once)
5.  MFP FLASH+ OP>FLASH(repeat)
6.  MODEM EEPROM(once)      7. MODEM EEPROM(repeat)
8.  MODEM SRAM(G/A)(once) 9. MODEM SRAM(G/A)(repeat)
10. MODEM SRAM(once)       11. MODEM SRAM(repeat)
12. MODEM SDRAM(once)      13. MODEM SDRAM(repeat)
```

Press [START] key.

Press [CUSTOM SETTINGS] key.



```
SIMULATION 66-3
FAX PWB MEMORY CHECK
MFP SRAM: CHECKING
MFP FLASH: NO CHECK
MFP OP.FLASH: NO CHECK
MODEM EEPROM: NG:A0010000
MODEM SRAM(G/A):NO CHECK
MODEM SRAM: NG A11
MODEM SDRAM: OK
```

When "repeat" is selected and [CUSTOM SETTINGS] key is pressed.

When Check is "once," the display stops at the result display. When [CUSTOM SETTINGS] key is pressed, the display returns to the initial display.

66-4

Purpose	Operation test/Check
Function (Purpose)	Used to check the output operation of data signals in each data output mode of FAX. (Used to check the operation of MODEM.) Send level: Max. (Only when FAX is installed)
Section	FAX
Item	Operation

Operation/Procedure

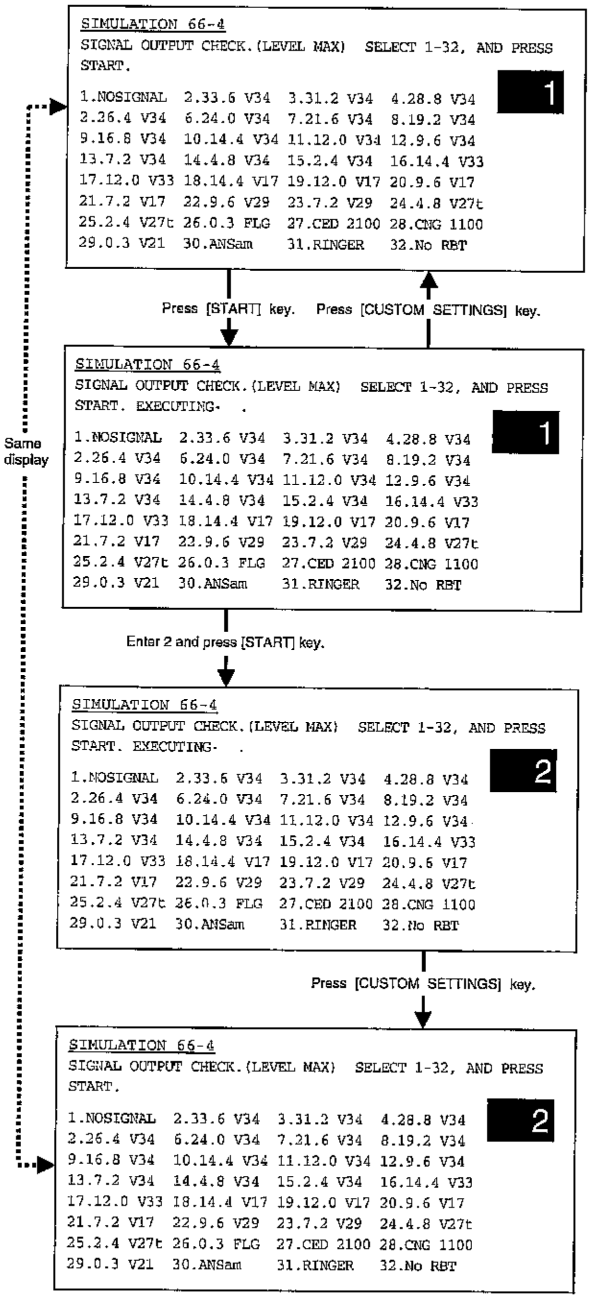
1) Enter the number corresponding to the output mode with 10-key.
2) Press [START] key.

The output is delivered at the max. send level.

1	NOSIGNAL	No signal	17	12.0 V33	12.0 V33
2	33.6 V34	26.4 V34	18	14.4 V17	14.4 V17
3	31.2 V34	31.2 V34	19	12.0 V17	12.0 V17
4	28.8 V34	28.8 V34	20	9.6 V17	9.6 V17
5	26.4 V34	26.4 V34	21	7.2 V17	7.2 V17
6	24.0 V34	24.0 V34	22	9.6 V29	9.6 V29
7	21.6 V34	21.6 V34	23	7.2 V29	7.2 V29
8	19.2 V34	19.2 V34	24	4.8 V27t	4.8 V27t
9	16.8 V34	16.8 V34	25	2.4 V27t	2.4 V27t
10	14.4 V34	14.4 V34	26	0.3 FLG	0.3 FLG
11	12.0 V34	12.0 V34	27	CED 2100	CED 2100
12	9.6 V34	9.6 V34	28	CNG 1100	CNG 1100
13	7.2 V34	7.2 V34	29	0.3 V21	0.3 V21
14	4.8 V34	4.8 V34	30	ANSam	ANSam
15	2.4 V34	2.4 V34	31	RINGER	RINGER
16	14.4 V33	14.4 V33	32	No RBT	No RBT

When [CUSTOM SETTINGS] key is pressed during execution, execution is stopped.

When a number is entered and [START] key is pressed during execution, the kind of signal can be changed.


Press [START] key.
Press [CUSTOM SETTINGS] key.
Same display
Enter 2 and press [START] key.
Press [CUSTOM SETTINGS] key.
1
1
2
2

```
SIMULATION 66-4
SIGNAL OUTPUT CHECK.(LEVEL MAX)  SELECT 1-32, AND PRESS
START.
1.NOSIGNAL  2.33.6 V34  3.31.2 V34  4.28.8 V34
2.26.4 V34  6.24.0 V34  7.21.6 V34  8.19.2 V34
9.16.8 V34  10.14.4 V34 11.12.0 V34 12.9.6 V34
13.7.2 V34  14.4.8 V34  15.2.4 V34  16.14.4 V33
17.12.0 V33 18.14.4 V17 19.12.0 V17 20.9.6 V17
21.7.2 V17  22.9.6 V29  23.7.2 V29  24.4.8 V27t
25.2.4 V27t 26.0.3 FLG  27.CED 2100 28.CNG 1100
29.0.3 V21  30.ANSam    31.RINGER   32.No RBT
```

```
SIMULATION 66-4
SIGNAL OUTPUT CHECK.(LEVEL MAX)  SELECT 1-32, AND PRESS
START. EXECUTING· .
1.NOSIGNAL  2.33.6 V34  3.31.2 V34  4.28.8 V34
2.26.4 V34  6.24.0 V34  7.21.6 V34  8.19.2 V34
9.16.8 V34  10.14.4 V34 11.12.0 V34 12.9.6 V34
13.7.2 V34  14.4.8 V34  15.2.4 V34  16.14.4 V33
17.12.0 V33 18.14.4 V17 19.12.0 V17 20.9.6 V17
21.7.2 V17  22.9.6 V29  23.7.2 V29  24.4.8 V27t
25.2.4 V27t 26.0.3 FLG  27.CED 2100 28.CNG 1100
29.0.3 V21  30.ANSam    31.RINGER   32.No RBT
```

```
SIMULATION 66-4
SIGNAL OUTPUT CHECK.(LEVEL MAX)  SELECT 1-32, AND PRESS
START. EXECUTING· .
1.NOSIGNAL  2.33.6 V34  3.31.2 V34  4.28.8 V34
2.26.4 V34  6.24.0 V34  7.21.6 V34  8.19.2 V34
9.16.8 V34  10.14.4 V34 11.12.0 V34 12.9.6 V34
13.7.2 V34  14.4.8 V34  15.2.4 V34  16.14.4 V33
17.12.0 V33 18.14.4 V17 19.12.0 V17 20.9.6 V17
21.7.2 V17  22.9.6 V29  23.7.2 V29  24.4.8 V27t
25.2.4 V27t 26.0.3 FLG  27.CED 2100 28.CNG 1100
29.0.3 V21  30.ANSam    31.RINGER   32.No RBT
```

```
SIMULATION 66-4
SIGNAL OUTPUT CHECK.(LEVEL MAX)  SELECT 1-32, AND PRESS
START.
1.NOSIGNAL  2.33.6 V34  3.31.2 V34  4.28.8 V34
2.26.4 V34  6.24.0 V34  7.21.6 V34  8.19.2 V34
9.16.8 V34  10.14.4 V34 11.12.0 V34 12.9.6 V34
13.7.2 V34  14.4.8 V34  15.2.4 V34  16.14.4 V33
17.12.0 V33 18.14.4 V17 19.12.0 V17 20.9.6 V17
21.7.2 V17  22.9.6 V29  23.7.2 V29  24.4.8 V27t
25.2.4 V27t 26.0.3 FLG  27.CED 2100 28.CNG 1100
29.0.3 V21  30.ANSam    31.RINGER   32.No RBT
```

66-5

Purpose	Operation test/Check
Function (Purpose)	Used to check the output operation of data signals in each data output mode of FAX. (Used to check the operation of MODEM.) An output is sent at the send level set by the soft switch. (Only when FAX is installed)
Section	FAX
Item	Operation

Operation/Procedure

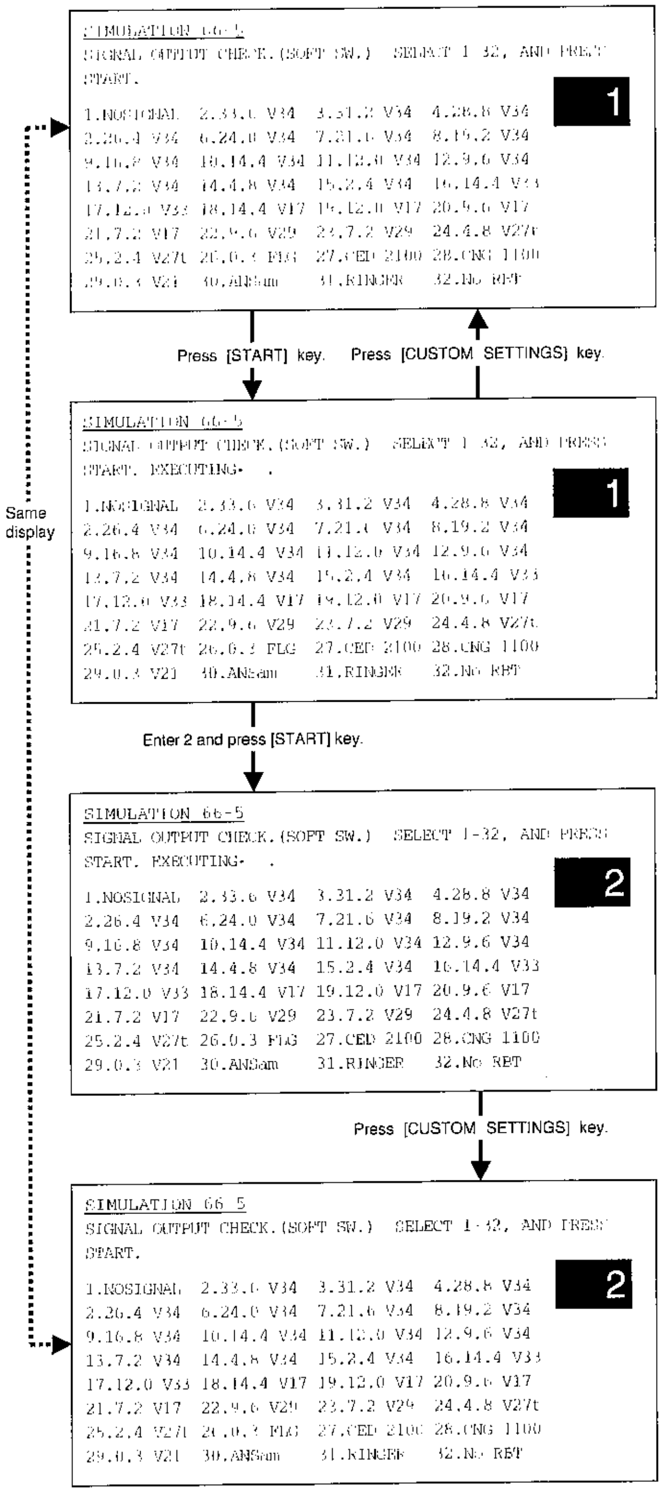
1) Enter the number corresponding to the output mode with 10-key.
2) Press [START] key.

The output is delivered at the send level set with the soft switch.

1	NOSIGNAL	No signal	17	12.0 V33	12.0 V33
2	33.6 V34	26.4 V34	18	14.4 V17	14.4 V17
3	31.2 V34	31.2 V34	19	12.0 V17	12.0 V17
4	28.8 V34	28.8 V34	20	9.6 V17	9.6 V17
5	26.4 V34	26.4 V34	21	7.2 V17	7.2 V17
6	24.0 V34	24.0 V34	22	9.6 V29	9.6 V29
7	21.6 V34	21.6 V34	23	7.2 V29	7.2 V29
8	19.2 V34	19.2 V34	24	4.8 V27t	4.8 V27t
9	16.8 V34	16.8 V34	25	2.4 V27t	2.4 V27t
10	14.4 V34	14.4 V34	26	0.3 FLG	0.3 FLG
11	12.0 V34	12.0 V34	27	CED 2100	CED 2100
12	9.6 V34	9.6 V34	28	CNG 1100	CNG 1100
13	7.2 V34	7.2 V34	29	0.3 V21	0.3 V21
14	4.8 V34	4.8 V34	30	ANSam	ANSam
15	2.4 V34	2.4 V34	31	RINGER	RINGER
16	14.4 V33	14.4 V33	32	No RBT	No RBT

When [CUSTOM SETTINGS] key is pressed during execution, execution is stopped.

When a number is entered and [START] key is pressed during execution, the kind of signal can be changed.



```
SIMULATION 66-5
SIGNAL OUTPUT CHECK.(SOFT SW.)  SELECT 1-32, AND PRESS
START.                                                        1
1.NOSIGNAL  2.33.6 V34  3.31.2 V34  4.28.8 V34
5.26.4 V34  6.24.0 V34  7.21.6 V34  8.19.2 V34
9.16.8 V34  10.14.4 V34 11.12.0 V34 12.9.6 V34
13.7.2 V34  14.4.8 V34  15.2.4 V34  16.14.4 V33
17.12.0 V33 18.14.4 V17 19.12.0 V17 20.9.6 V17
21.7.2 V17  22.9.6 V29  23.7.2 V29  24.4.8 V27t
25.2.4 V27t 26.0.3 FLG  27.CED 2100 28.CNG 1100
29.0.3 V21  30.ANSam    31.RINGER   32.No RBT
```

Press [START] key. Press [CUSTOM SETTINGS] key.

```
SIMULATION 66-5
SIGNAL OUTPUT CHECK.(SOFT SW.)  SELECT 1-32, AND PRESS
START. EXECUTING·   .                                         1
1.NOSIGNAL  2.33.6 V34  3.31.2 V34  4.28.8 V34
5.26.4 V34  6.24.0 V34  7.21.6 V34  8.19.2 V34
9.16.8 V34  10.14.4 V34 11.12.0 V34 12.9.6 V34
13.7.2 V34  14.4.8 V34  15.2.4 V34  16.14.4 V33
17.12.0 V33 18.14.4 V17 19.12.0 V17 20.9.6 V17
21.7.2 V17  22.9.6 V29  23.7.2 V29  24.4.8 V27t
25.2.4 V27t 26.0.3 FLG  27.CED 2100 28.CNG 1100
29.0.3 V21  30.ANSam    31.RINGER   32.No RBT
```

Enter 2 and press [START] key.

```
SIMULATION 66-5
SIGNAL OUTPUT CHECK.(SOFT SW.)  SELECT 1-32, AND PRESS
START. EXECUTING·   .                                         2
1.NOSIGNAL  2.33.6 V34  3.31.2 V34  4.28.8 V34
5.26.4 V34  6.24.0 V34  7.21.6 V34  8.19.2 V34
9.16.8 V34  10.14.4 V34 11.12.0 V34 12.9.6 V34
13.7.2 V34  14.4.8 V34  15.2.4 V34  16.14.4 V33
17.12.0 V33 18.14.4 V17 19.12.0 V17 20.9.6 V17
21.7.2 V17  22.9.6 V29  23.7.2 V29  24.4.8 V27t
25.2.4 V27t 26.0.3 FLG  27.CED 2100 28.CNG 1100
29.0.3 V21  30.ANSam    31.RINGER   32.No RBT
```

Press [CUSTOM SETTINGS] key.

```
SIMULATION 66-5
SIGNAL OUTPUT CHECK.(SOFT SW.)  SELECT 1-32, AND PRESS
START.                                                        2
1.NOSIGNAL  2.33.6 V34  3.31.2 V34  4.28.8 V34
5.26.4 V34  6.24.0 V34  7.21.6 V34  8.19.2 V34
9.16.8 V34  10.14.4 V34 11.12.0 V34 12.9.6 V34
13.7.2 V34  14.4.8 V34  15.2.4 V34  16.14.4 V33
17.12.0 V33 18.14.4 V17 19.12.0 V17 20.9.6 V17
21.7.2 V17  22.9.6 V29  23.7.2 V29  24.4.8 V27t
25.2.4 V27t 26.0.3 FLG  27.CED 2100 28.CNG 1100
29.0.3 V21  30.ANSam    31.RINGER   32.No RBT
```

66-6

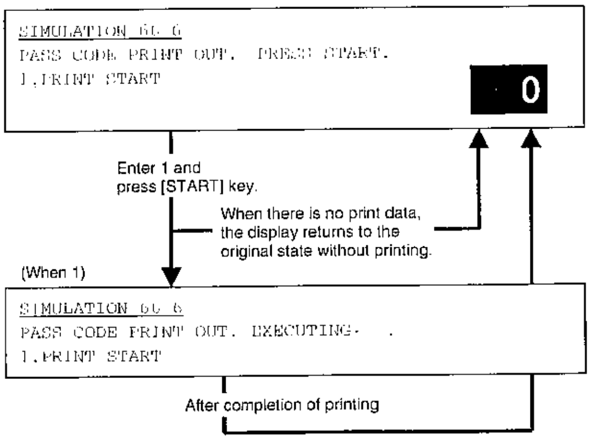
Purpose	User data output/Check (Display/Print)
Function (Purpose)	Used to print the confidential pass code. (Used when the confidential pass code is forgotten.) (Only when FAX is installed)
Section	FAX
Item	Data

Operation/Procedure

1) Enter 1 with 10-key and press [START] key.

1	PRINT START	Print start

The paper is automatically selected with the size saved in the image memory.



```
SIMULATION 66-6
PASS CODE PRINT OUT.  PRESS START.
1.PRINT START                                   0
```

Enter 1 and press [START] key.

When there is no print data, the display returns to the original state without printing.

(When 1)

```
SIMULATION 66-6
PASS CODE PRINT OUT. EXECUTING·   .
1.PRINT START
```

After completion of printing

66-7

Purpose	User data output/Check (Display/Print)
Function (Purpose)	Used to print the image memory data (memory send/ receive). (Only when FAX is installed)
Section	FAX
Item	Data

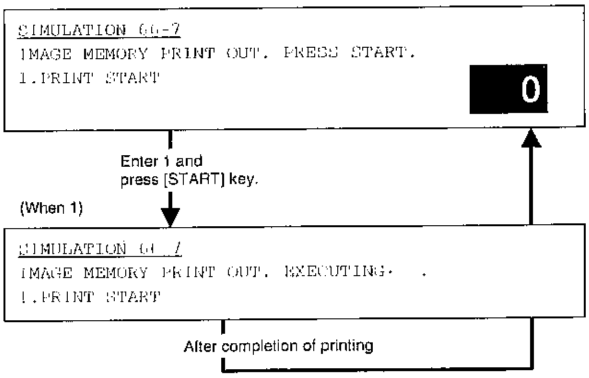
Operation/Procedure

All image data stored in the image memory are printed.

* The confidential receive data are also printed.

1	PRINT START	Print start

The paper is automatically selected with the size saved in the image memory.



```
SIMULATION 66-7
IMAGE MEMORY PRINT OUT.  PRESS START.
1.PRINT START                                   0
```

Enter 1 and press [START] key.

(When 1)

```
SIMULATION 66-7
IMAGE MEMORY PRINT OUT. EXECUTING·   .
1.PRINT START
```

After completion of printing

66-8

Purpose	Operation test/Check
Function (Purpose)	Used to check the output operation of various sound signals of FAX. (Used to check the operation of the sound output IC.) Send level: Max. (Only when FAX is installed)
Section	FAX
Item	Operation

Operation/Procedure

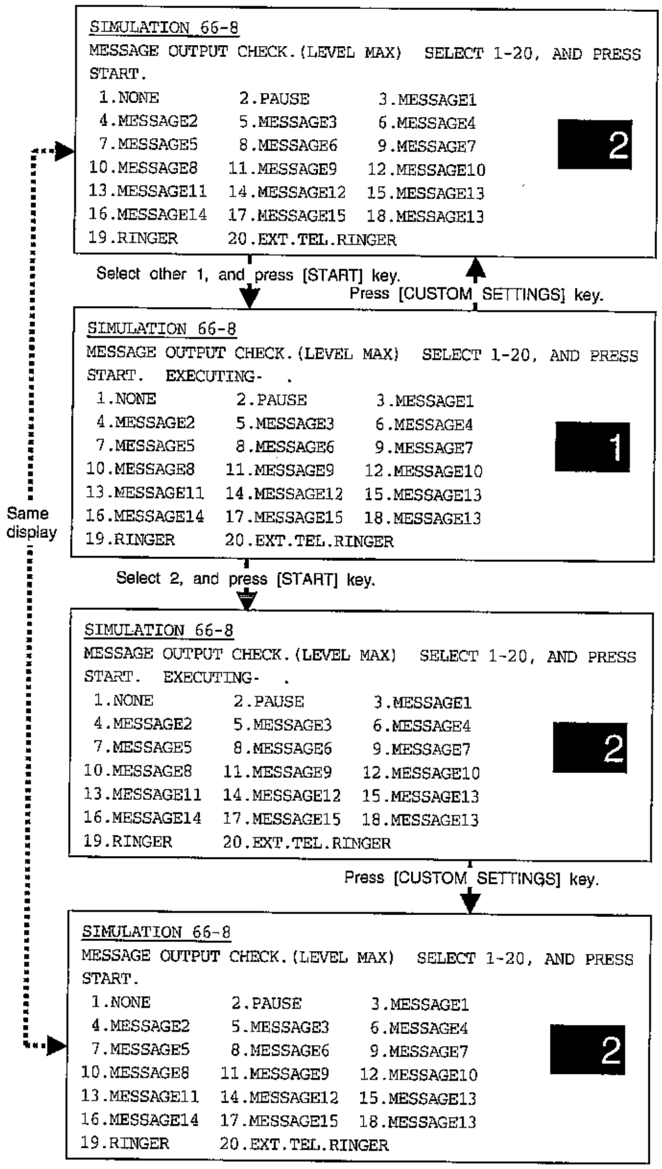
1) Enter the number corresponding to the output mode with 10-key.
2) Press [START] key.

The output is delivered at the max. level.

1	NONE	Mute	11	MESSAGE 9	Message 9
2	PAUSE	Pause sound	12	MESSAGE 10	Message 10
3	MESSAGE1	Message 1	13	MESSAGE 11	Message 11
4	MESSAGE2	Message 2	14	MESSAGE 12	Message 12
5	MESSAGE3	Message 3	15	MESSAGE 13	Message 13
6	MESSAGE4	Message 4	16	MESSAGE 14	Message 14
7	MESSAGE5	Message 5	17	MESSAGE 15	Message 15
8	MESSAGE6	Message 6	18	ALARM	Alarm
9	MESSAGE7	Message 7	19	RINGER	Call ring
10	MESSAGE8	Message 8	20	EXT.TEL.RINGER	External TEL ring

When the number is entered during execution, the kind of signal can be changed.

When [START] key is pressed, the voice message is sent. When [CUSTOM SETTINGS] key is pressed, it is stopped.



```
SIMULATION 66-8
MESSAGE OUTPUT CHECK.(LEVEL MAX)  SELECT 1-20, AND PRESS
START.
 1.NONE        2.PAUSE       3.MESSAGE1
 4.MESSAGE2    5.MESSAGE3    6.MESSAGE4
 7.MESSAGE5    8.MESSAGE6    9.MESSAGE7                 2
10.MESSAGE8   11.MESSAGE9   12.MESSAGE10
13.MESSAGE11  14.MESSAGE12  15.MESSAGE13
16.MESSAGE14  17.MESSAGE15  18.MESSAGE13
19.RINGER     20.EXT.TEL.RINGER
```

Select other 1, and press [START] key.

Press [CUSTOM SETTINGS] key.

```
SIMULATION 66-8
MESSAGE OUTPUT CHECK.(LEVEL MAX)  SELECT 1-20, AND PRESS
START.  EXECUTING-  .
 1.NONE        2.PAUSE       3.MESSAGE1
 4.MESSAGE2    5.MESSAGE3    6.MESSAGE4
 7.MESSAGE5    8.MESSAGE6    9.MESSAGE7                 1
10.MESSAGE8   11.MESSAGE9   12.MESSAGE10
13.MESSAGE11  14.MESSAGE12  15.MESSAGE13
16.MESSAGE14  17.MESSAGE15  18.MESSAGE13
19.RINGER     20.EXT.TEL.RINGER
```

Same display

Select 2, and press [START] key.

```
SIMULATION 66-8
MESSAGE OUTPUT CHECK.(LEVEL MAX)  SELECT 1-20, AND PRESS
START.  EXECUTING-  .
 1.NONE        2.PAUSE       3.MESSAGE1
 4.MESSAGE2    5.MESSAGE3    6.MESSAGE4
 7.MESSAGE5    8.MESSAGE6    9.MESSAGE7                 2
10.MESSAGE8   11.MESSAGE9   12.MESSAGE10
13.MESSAGE11  14.MESSAGE12  15.MESSAGE13
16.MESSAGE14  17.MESSAGE15  18.MESSAGE13
19.RINGER     20.EXT.TEL.RINGER
```

Press [CUSTOM SETTINGS] key.

```
SIMULATION 66-8
MESSAGE OUTPUT CHECK.(LEVEL MAX)  SELECT 1-20, AND PRESS
START.
 1.NONE        2.PAUSE       3.MESSAGE1
 4.MESSAGE2    5.MESSAGE3    6.MESSAGE4
 7.MESSAGE5    8.MESSAGE6    9.MESSAGE7                 2
10.MESSAGE8   11.MESSAGE9   12.MESSAGE10
13.MESSAGE11  14.MESSAGE12  15.MESSAGE13
16.MESSAGE14  17.MESSAGE15  18.MESSAGE13
19.RINGER     20.EXT.TEL.RINGER
```

66-9

Purpose	Operation test/Check
Function (Purpose)	Used to check the output operation of various sound signals of FAX. (Used to check the operation of the sound output IC.) An output is sent at the send level set by the soft switch. (Only when FAX is installed)
Section	FAX
Item	Operation

Operation/Procedure

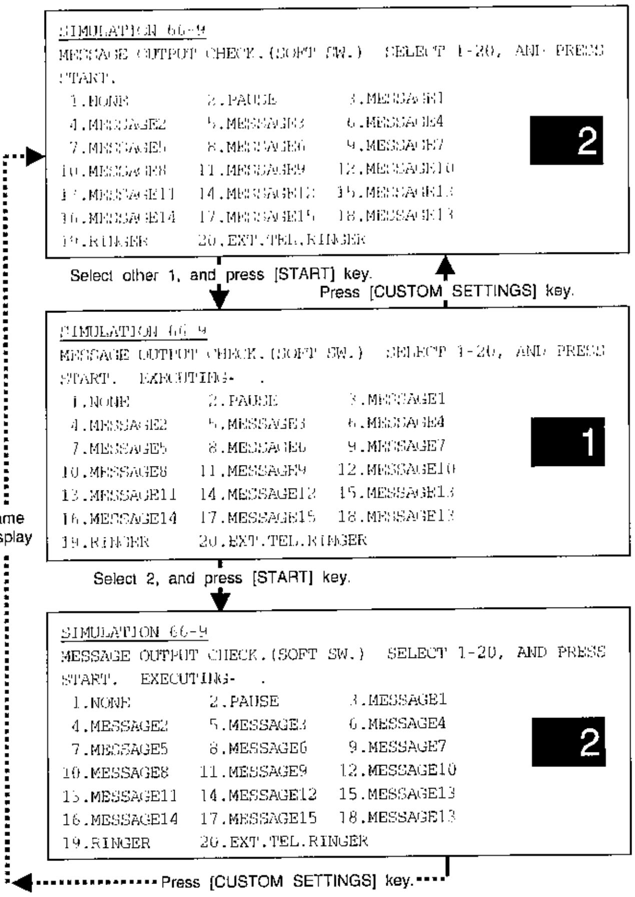
1) Enter the number corresponding to the output mode with 10-key.
2) Press [START] key.

The output is delivered at the send level set with the soft SW.

1	NONE	Mute	11	MESSAGE 9	MESSAGE 9
2	PAUSE	Pause sound	12	MESSAGE10	MESSAGE 10
3	MESSAGE1	MESSAGE 1	13	MESSAGE11	MESSAGE 11
4	MESSAGE2	MESSAGE 2	14	MESSAGE12	MESSAGE 12
5	MESSAGE3	MESSAGE 3	15	MESSAGE13	MESSAGE 13
6	MESSAGE4	MESSAGE 4	16	MESSAGE14	MESSAGE 14
7	MESSAGE5	MESSAGE 5	17	MESSAGE15	MESSAGE 15
8	MESSAGE6	MESSAGE 6	18	ALARM	Alarm
9	MESSAGE7	MESSAGE 7	19	RINGER	Call ring
10	MESSAGE8	MESSAGE 8	20	EXT.TEL.RINGER	External TEL ring

When the number is entered during execution, the kind of signal can be changed.

When [START] key is pressed, the voice message is sent. When [CUSTOM SETTINGS] key is pressed, it is stopped.



```
SIMULATION 66-9
MESSAGE OUTPUT CHECK.(SOFT SW.)  SELECT 1-20, AND PRESS
START.
 1.NONE         2.PAUSE         3.MESSAGE1
 4.MESSAGE2     5.MESSAGE3      6.MESSAGE4
 7.MESSAGE5     8.MESSAGE6      9.MESSAGE7
10.MESSAGE8    11.MESSAGE9     12.MESSAGE10
13.MESSAGE11   14.MESSAGE12    15.MESSAGE13
16.MESSAGE14   17.MESSAGE15    18.MESSAGE13
19.RINGER      20.EXT.TEL.RINGER
                                              2
```

Select other 1, and press [START] key.

Press [CUSTOM SETTINGS] key.

```
SIMULATION 66-9
MESSAGE OUTPUT CHECK.(SOFT SW.)  SELECT 1-20, AND PRESS
START.  EXECUTING-  .
 1.NONE         2.PAUSE         3.MESSAGE1
 4.MESSAGE2     5.MESSAGE3      6.MESSAGE4
 7.MESSAGE5     8.MESSAGE6      9.MESSAGE7
10.MESSAGE8    11.MESSAGE9     12.MESSAGE10
13.MESSAGE11   14.MESSAGE12    15.MESSAGE13
16.MESSAGE14   17.MESSAGE15    18.MESSAGE13
19.RINGER      20.EXT.TEL.RINGER
                                              1
```

Same display

Select 2, and press [START] key.

```
SIMULATION 66-9
MESSAGE OUTPUT CHECK.(SOFT SW.)  SELECT 1-20, AND PRESS
START.  EXECUTING-  .
 1.NONE         2.PAUSE         3.MESSAGE1
 4.MESSAGE2     5.MESSAGE3      6.MESSAGE4
 7.MESSAGE5     8.MESSAGE6      9.MESSAGE7
10.MESSAGE8    11.MESSAGE9     12.MESSAGE10
13.MESSAGE11   14.MESSAGE12    15.MESSAGE13
16.MESSAGE14   17.MESSAGE15    18.MESSAGE13
19.RINGER      20.EXT.TEL.RINGER
                                              2
```

Press [CUSTOM SETTINGS] key.

66-10

Purpose	User data output/Check (Display/Print)
Function (Purpose)	Used to clear all data of the image memory (memory send/receive). The confidential data are also cleared at the same time. (Only when FAX is installed)
Section	FAX
Item	Data

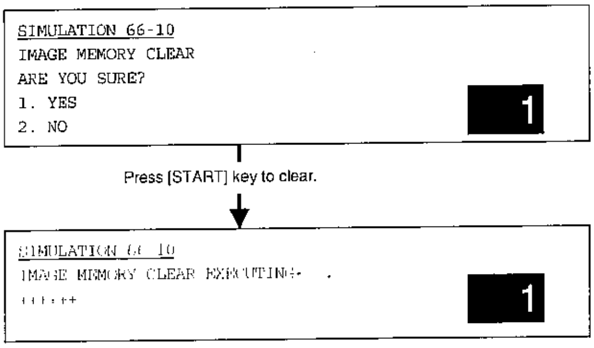
Operation/Procedure

1) Select YES/NO of image memory clear with 10-key.

1	YES	Image memory clear is executed.
2	NO	Clear is not executed.

2) Press [START] key.

The SRAM image data management table and image data in the Flash ROM area and HD (except for filing images) are cleared.



```
SIMULATION 66-10
IMAGE MEMORY CLEAR
ARE YOU SURE?
1. YES
2. NO                                  1
```

Press [START] key to clear.

```
SIMULATION 66-10
IMAGE MEMORY CLEAR EXECUTING-  .
++++++                                 1
```

The processing status of image memory clear is displayed with "+."

66-11

Purpose	Operation test/Check
Function (Purpose)	Used to check the output operation of FAX G3 mode 300bps. (Used to check the operation of MODEM.) Send level: Max. (Only when FAX is installed)
Section	FAX
Item	Operation

Operation/Procedure

1) Select the number corresponding to the output mode with 10-key.

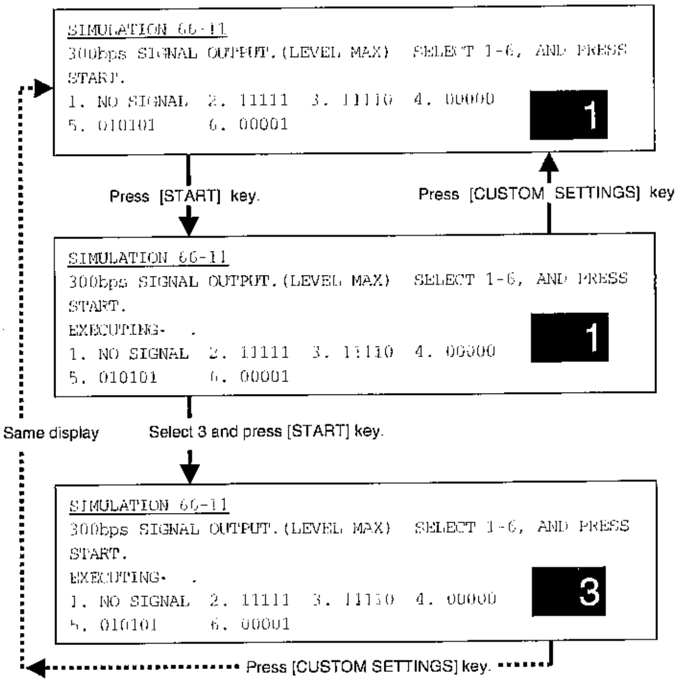
2) Press [START] key.

The signal is sent in the max. send level.

1	NO SIGNAL	No signal	4	00000	00000
2	11111	11111	5	010101	010101
3	11110	11110	6	00001	00001

When the number is entered during execution, the kind of signal can be changed.

When [CUSTOM SETTINGS] key is pressed during execution, the operation is stopped.



```
SIMULATION 66-11
300bps SIGNAL OUTPUT.(LEVEL MAX)  SELECT 1-6, AND PRESS
START.
1. NO SIGNAL  2. 11111  3. 11110  4. 00000
5. 010101     6. 00001                      1
```

Press [START] key.

Press [CUSTOM SETTINGS] key

```
SIMULATION 66-11
300bps SIGNAL OUTPUT.(LEVEL MAX)  SELECT 1-6, AND PRESS
START.
EXECUTING-  .
1. NO SIGNAL  2. 11111  3. 11110  4. 00000
5. 010101     6. 00001                      1
```

Same display

Select 3 and press [START] key.

```
SIMULATION 66-11
300bps SIGNAL OUTPUT.(LEVEL MAX)  SELECT 1-6, AND PRESS
START.
EXECUTING-  .
1. NO SIGNAL  2. 11111  3. 11110  4. 00000
5. 010101     6. 00001                      3
```

Press [CUSTOM SETTINGS] key.

66-12

Purpose	Operation test/Check
Function (Purpose)	Used to check the output operation of FAX G3 mode 300bps. (Used to check the operation of MODEM.) An output is send at the send level set by the soft switch. (Only when FAX is installed)
Section	FAX
Item	Operation

Operation/Procedure

1) Select the number corresponding to the output mode with 10-key.

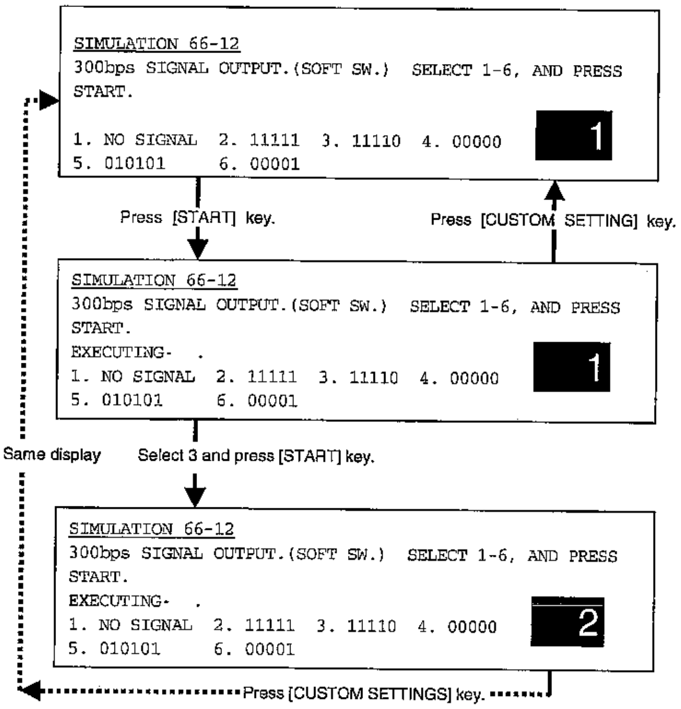
2) Press [START] key.

The signal is sent in the send level set with the soft switch.

1	NO SIGNAL	No signal	4	00000	00000
2	11111	11111	5	010101	010101
3	11110	11110	6	00001	00001

When the number is entered during execution, the kind of signal can be changed.

When [CUSTOM SETTINGS] key is pressed during execution, the operation is stopped.


```
SIMULATION 66-12
300bps SIGNAL OUTPUT.(SOFT SW.)  SELECT 1-6, AND PRESS
START.

1. NO SIGNAL  2. 11111  3. 11110  4. 00000      1
5. 010101     6. 00001
```

```
SIMULATION 66-12
300bps SIGNAL OUTPUT.(SOFT SW.)  SELECT 1-6, AND PRESS
START.
EXECUTING-  .
1. NO SIGNAL  2. 11111  3. 11110  4. 00000      1
5. 010101     6. 00001
```

```
SIMULATION 66-12
300bps SIGNAL OUTPUT.(SOFT SW.)  SELECT 1-6, AND PRESS
START.
EXECUTING-  .
1. NO SIGNAL  2. 11111  3. 11110  4. 00000      2
5. 010101     6. 00001
```

66-13

Purpose	Setting
Function (Purpose)	Used to enter (set) the number of FAX dial signal output test. (The dial number set by this simulation is outputted when the dial signal output test is made by SIM 66-14 - 16.) (Only when FAX is installed)
Section	FAX
Item	Data

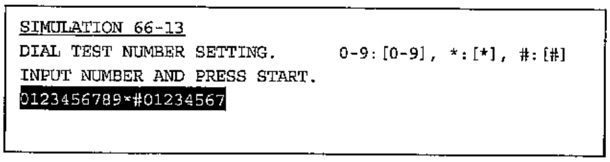
Operation/Procedure

1) Enter the dial number with 10-key.

   Use 10-key, [*] key, and [#] key to enter the number. The upper limit is 20 digits.

   When [CLEAR] key is pressed, the mode returns to the initial state.

2) Press [START] key.


```
SIMULATION 66-13
DIAL TEST NUMBER SETTING.        0-9:[0-9], *:[*], #:[#]
INPUT NUMBER AND PRESS START.
0123456789*#01234567
```

66-14

Purpose	Setting/Operation test/Check
Function (Purpose)	Used to set the make time in the FAX pulse dial mode (10pps) and to test the dial signal output. (The dial number signal set by SIM 66-13 is outputted.) Used to check troubles in dialing and to check the operation. (Only when FAX is installed)
Section	FAX
Item	Operation

Operation/Procedure

1) Enter 0 with 10-key.
2) Press [START] key.

The dial signal is outputted.

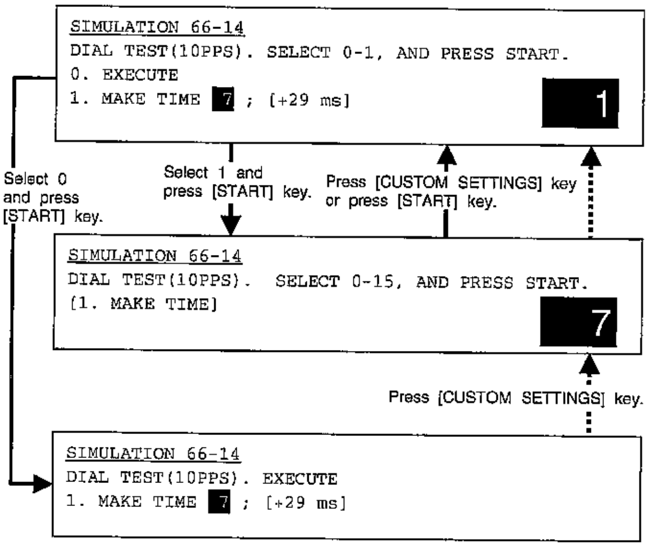
(Dial pulse make time setting)

1) Enter 1 with 10-key.
2) Press [START] key.
3) Enter the set value with 10-key.
4) Press [START] key.

0	EXECUTE	Execute
1	MAKE TIME	Dial pulse make time setting (0 - 15)

The dial signal is sent with the set value + 29ms.

When [CUSTOM SETTINGS] key is pressed during execution, the operation is stopped.


```
SIMULATION 66-14
DIAL TEST(10PPS). SELECT 0-1, AND PRESS START.
0. EXECUTE
1. MAKE TIME 7 ; [+29 ms]                        1
```
Select 0 and press [START] key.
Select 1 and press [START] key.
Press [CUSTOM SETTINGS] key or press [START] key.
```
SIMULATION 66-14
DIAL TEST(10PPS).  SELECT 0-15, AND PRESS START.
[1. MAKE TIME]
                                                 7
```
Press [CUSTOM SETTINGS] key.
```
SIMULATION 66-14
DIAL TEST(10PPS). EXECUTE
1. MAKE TIME 7 ; [+29 ms]
```

66-15

Purpose	Setting/Operation test/Check
Function (Purpose)	Used to set the make time in the FAX pulse dial mode (20pps) and to test the dial signal output. (The dial number signal set by SIM 66-13 is outputted.) Used to check troubles in dialing and to check the operation. (Only when FAX is installed)
Section	FAX
Item	Operation

Operation/Procedure

1) Enter 0 with 10-key.
2) Press [START] key.

The dial signal is outputted.

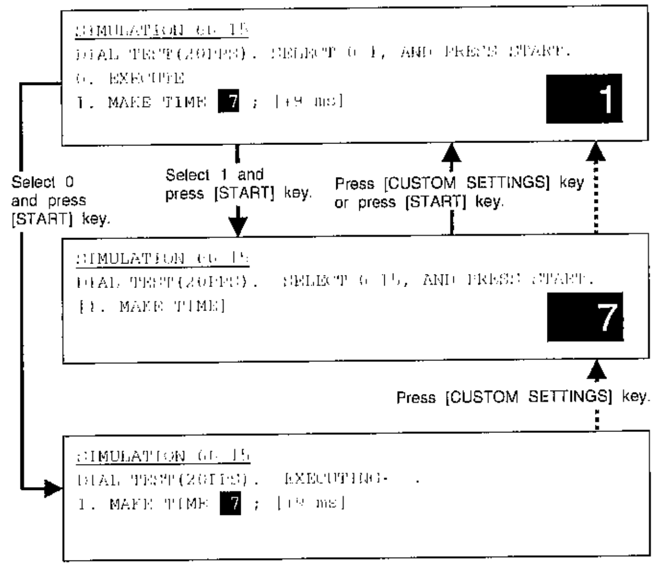
(Dial pulse make time setting)

1) Enter 1 with 10-key.
2) Press [START] key.
3) Enter the set value with 10-key.
4) Press [START] key.

0	EXECUTE	Execute
1	MAKE TIME	Dial pulse make time setting (0 - 15)

The dial signal is sent with the set value + 9ms.

When [CUSTOM SETTINGS] key is pressed during execution, the operation is stopped.



```
SIMULATION 66-15
DIAL TEST(20PPS). SELECT 0-1, AND PRESS START.
0. EXECUTE
1. MAKE TIME 7 ; [19 ms]                        1
```

```
SIMULATION 66-15
DIAL TEST(20PPS).  SELECT 0-15, AND PRESS START.
[1. MAKE TIME]                                  7
```

```
SIMULATION 66-15
DIAL TEST(20PPS).  EXECUTING・・・.
1. MAKE TIME 7 ; [19 ms]
```

Select 0 and press [START] key.
Select 1 and press [START] key.
Press [CUSTOM SETTINGS] key or press [START] key.
Press [CUSTOM SETTINGS] key.

66-16

Purpose	Setting/Operation test/Check
Function (Purpose)	Used to check the dial signal (DTMF) output in the FAX tone dial mode. (The dial number signal set by SIM 66-13 is outputted.) The send level can be set to an optional level. Used to check troubles in dialing and to check the operation. (Only when FAX is installed)
Section	FAX
Item	Operation

Operation/Procedure

1) Enter 0 with 10-key.
2) Press [START] key.

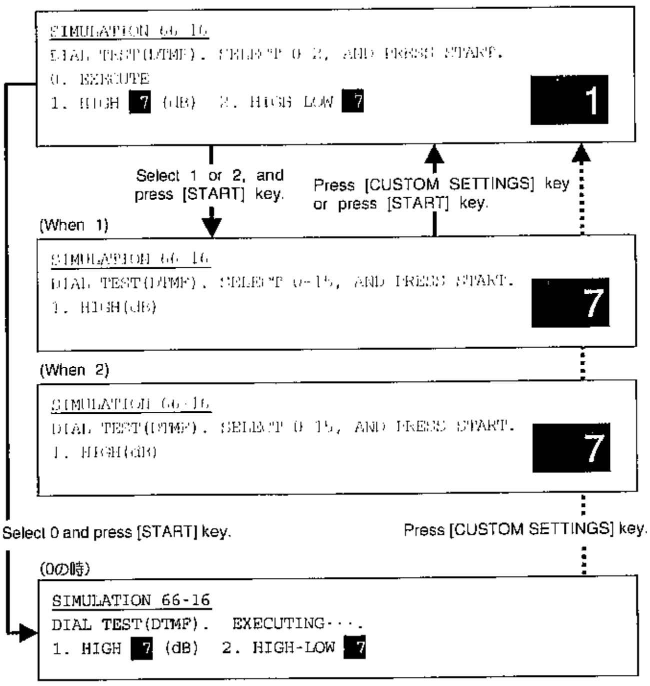
The dial signal is outputted.

(Dial pulse make time setting)

1) Enter 1 or 2 with 10-key.
2) Press [START] key.
3) Enter the set value with 10-key.
4) Press [START] key.

Item			Set range
0	EXECUTE	Execution	
1	HIGH	High group level	0 - 15dB
2	HIGH LOW	High group - Low group	0 - 15

When [CUSTOM SETTINGS] key is pressed during execution, the operation is stopped.



```
SIMULATION 66-16
DIAL TEST(DTMF). SELECT 0-2, AND PRESS START.
0. EXECUTE
1. HIGH 7 (dB)  2. HIGH LOW 7                   1
```

(When 1)

```
SIMULATION 66-16
DIAL TEST(DTMF). SELECT 0-15, AND PRESS START.
1. HIGH(dB)                                     7
```

(When 2)

```
SIMULATION 66-16
DIAL TEST(DTMF). SELECT 0-15, AND PRESS START.
1. HIGH(dB)                                     7
```

(0の時)

```
SIMULATION 66-16
DIAL TEST(DTMF).  EXECUTING・・・.
1. HIGH 7 (dB)  2. HIGH-LOW 7
```

Select 1 or 2, and press [START] key.
Press [CUSTOM SETTINGS] key or press [START] key.
Select 0 and press [START] key.
Press [CUSTOM SETTINGS] key.

66-17

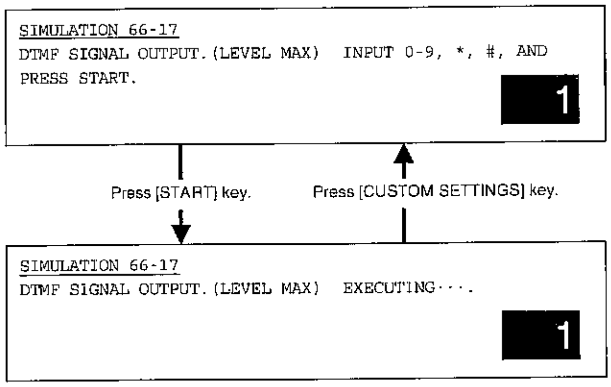
Purpose	Setting
Function (Purpose)	Used to check the dial signal (DTMF) output in the FAX tone dial mode. Send level: Max. Used to check the operation. (Only when FAX is installed)
Section	FAX
Item	Operation

Operation/Procedure

1) Enter the DTMF signal (1 - 9, 0, *, #) to be sent with 10-key.
2) Press [START] key.

The signal is sent in the max. send level.

When [CUSTOM SETTINGS] key is pressed during execution, the operation is stopped.



```
SIMULATION 66-17
DTMF SIGNAL OUTPUT.(LEVEL MAX)  INPUT 0-9, *, #, AND
PRESS START.
                                                1
```

```
SIMULATION 66-17
DTMF SIGNAL OUTPUT.(LEVEL MAX)  EXECUTING・・・.
                                                1
```

Press [START] key.
Press [CUSTOM SETTINGS] key.

⚠: Feb. 9 2004

66-18

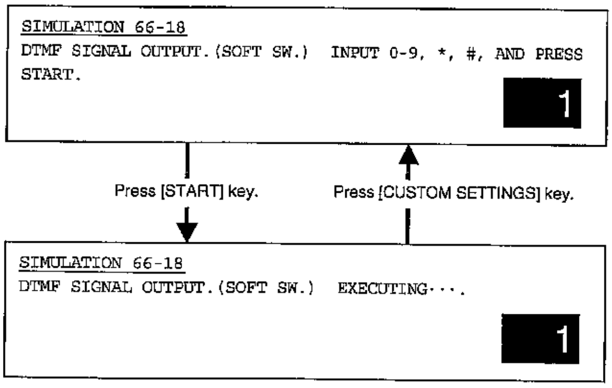
Purpose	Setting
Function (Purpose)	Used to check the dial signal (DTMF) output in the FAX tone dial mode. An output is sent at the send level set by the soft switch. Used to check the operation. (Only when FAX is installed)
Section	FAX
Item	Operation

Operation/Procedure

1) Enter the DTMF signal (1 - 9, 0, *, #) to be sent with 10-key.
2) Press [START] key.

The signal is sent in the send level set with the soft SW.

When [CUSTOM SETTINGS] key is pressed during execution, the operation is stopped.



```
SIMULATION 66-18
DTMF SIGNAL OUTPUT.(SOFT SW.)  INPUT 0-9, *, #, AND PRESS
START.
```

```
SIMULATION 66-18
DTMF SIGNAL OUTPUT.(SOFT SW.)  EXECUTING···.
```

66-19

Purpose	Data transfer
Function (Purpose)	Used to back-up the HDD data into the Flash memory (optional FAX expansion memory: AR-MM9). (Only when FAX is installed)
Section	FAX
Item	Data

Operation/Procedure

1) Select YES/NO of data transfer (backup).

1	YES	Backup is executed.
2	NO	Backup is not executed.

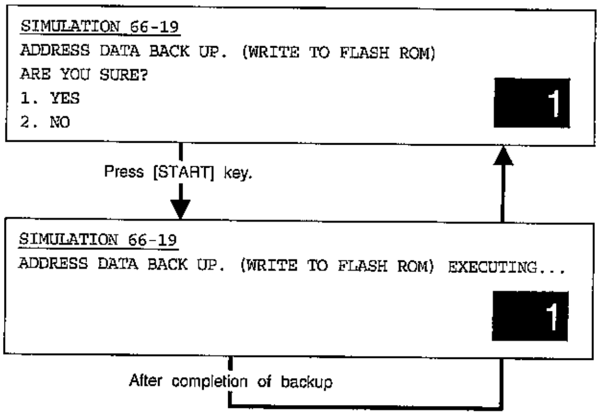
2) Press [START] key.

This function is valid only when the AR-MM9 is installed.

Backup contents

- Address book data (FAX, Mail, Address)
- One-touch dial
- FTP expansion
- Group expansion
- Program
- Use index
- Standard sender
- IFAX sender registration
- FAX sender registration
- Item name
- Fine name
- FAX receive select table
- IFAX receive YES/NO
- Polling allow number
- Memory box
- Sender name
- Soft SW

The other contents are not backed up.



```
SIMULATION 66-19
ADDRESS DATA BACK UP. (WRITE TO FLASH ROM)
ARE YOU SURE?
1. YES
2. NO
```

```
SIMULATION 66-19
ADDRESS DATA BACK UP. (WRITE TO FLASH ROM) EXECUTING...
```

66-20

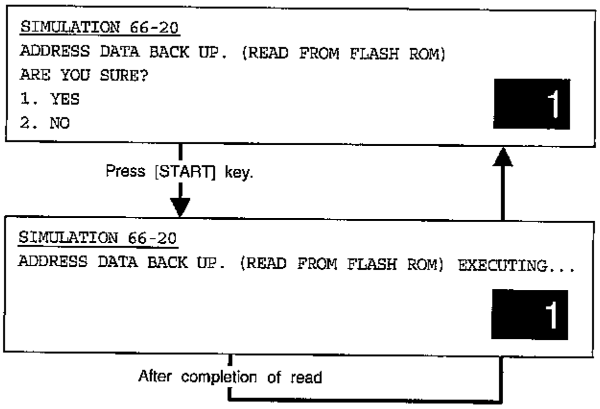
Purpose	Data transfer
⚠ **Function (Purpose)**	Used to read the back-up data by SIM 66-19 to the SRAM/HDD. (Only when FAX is installed)
Section	FAX
Item	Data

Operation/Procedure

1) Select YES/NO of data transfer.

1	YES	Backup is executed.
2	NO	Backup is not executed.

2) Press [START] key.



```
SIMULATION 66-20
ADDRESS DATA BACK UP. (READ FROM FLASH ROM)
ARE YOU SURE?
1. YES
2. NO
```

```
SIMULATION 66-20
ADDRESS DATA BACK UP. (READ FROM FLASH ROM) EXECUTING...
```

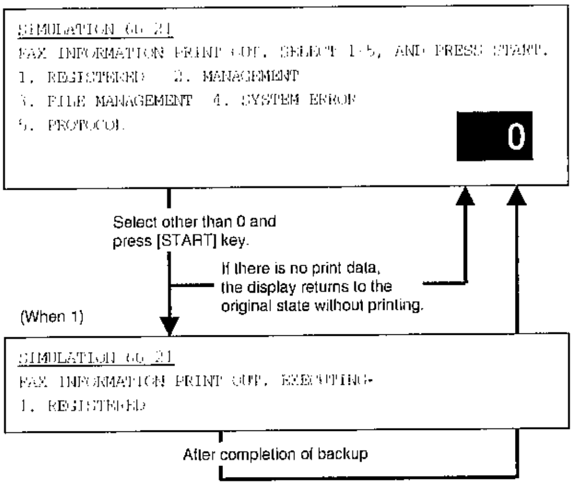
66-21

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to print information related to FAX (various registrations, communication management, file management, system error protocol). (Only when FAX is installed)
Section	FAX
Item	Data

Operation/Procedure

1) Enter the number corresponding to the information (item) to be printed with 10-key.
2) Press [START] key.

1	REGISTERED	Various registration information
2	MANAGEMENT	Communication management information
3	FILE MANAGEMENT	File management information
4	SYSTEM ERROR	System error information
5	PROTOCOL	Protocol information


Select other than 0 and press [START] key.
If there is no print data, the display returns to the original state without printing.
(When 1)
After completion of backup

```
SIMULATION 66-21
FAX INFORMATION PRINT OUT. SELECT 1-5, AND PRESS START.
1. REGISTERED    2. MANAGEMENT
3. FILE MANAGEMENT   4. SYSTEM ERROR
5. PROTOCOL
                                                  0
```

```
SIMULATION 66-21
FAX INFORMATION PRINT OUT. EXECUTING.
1. REGISTERED
```

66-22

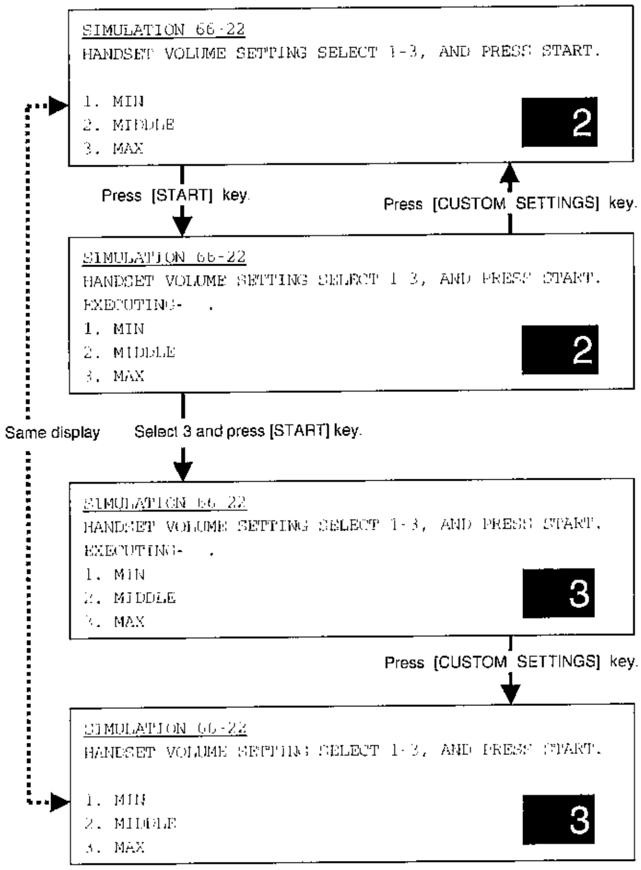
Purpose	Setting
Function (Purpose)	Used to adjust the handset volume. (Only when the FAX is installed.)
Section	FAX
Item	Operation

Operation/Procedure

1) Enter the number corresponding to the volume with 10-key.
2) Press [START] key.

1	MIN	Small
2	MIDDLE	Medium
3	MAX	Large

Selection of 1, 2, and 3 can be made during execution.


Press [START] key.
Press [CUSTOM SETTINGS] key.
Same display
Select 3 and press [START] key.
Press [CUSTOM SETTINGS] key.

```
SIMULATION 66-22
HANDSET VOLUME SETTING SELECT 1-3, AND PRESS START.

1. MIN
2. MIDDLE                                         2
3. MAX
```

```
SIMULATION 66-22
HANDSET VOLUME SETTING SELECT 1-3, AND PRESS START.
EXECUTING.  .
1. MIN
2. MIDDLE                                         2
3. MAX
```

```
SIMULATION 66-22
HANDSET VOLUME SETTING SELECT 1-3, AND PRESS START.
EXECUTING.  .
1. MIN
2. MIDDLE                                         3
3. MAX
```

```
SIMULATION 66-22
HANDSET VOLUME SETTING SELECT 1-3, AND PRESS START.

1. MIN
2. MIDDLE                                         3
3. MAX
```

66-23

Purpose	Setting
Function (Purpose)	Used to download the FAX program. (Only when FAX is installed) Not used in the market. (For development)
Section	FAX
Item	

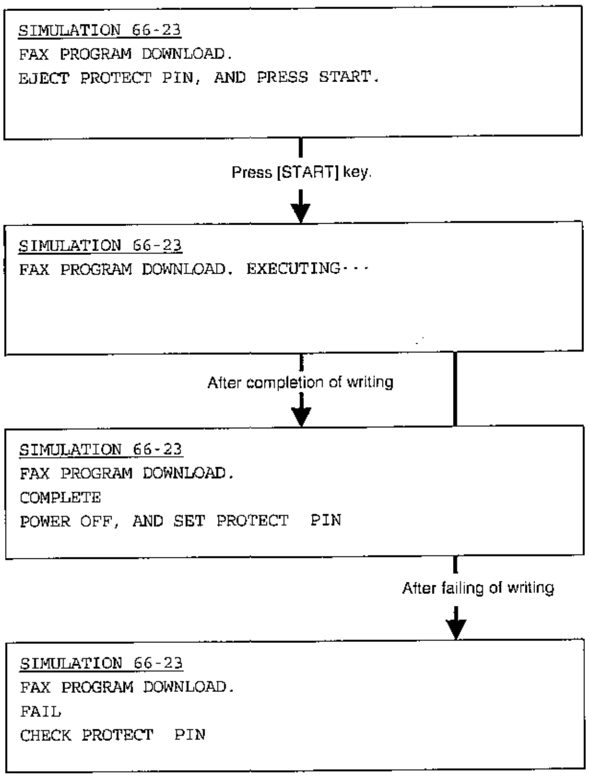
Operation/Procedure

1) Turn OFF the power.
2) Remove the protect pin.
3) Turn ON the power.
4) Enter the SIM 66-23 mode.
5) Press [START] key.

During operation, "EXECUTING" is displayed. When the operation is completed normally, "COMPLETE" is displayed.

If an error occurs, "FAIL" is displayed.

6) Turn OFF the power, and attach the protect pin.


Press [START] key.
After completion of writing
After failing of writing

```
SIMULATION 66-23
FAX PROGRAM DOWNLOAD.
EJECT PROTECT PIN, AND PRESS START.
```

```
SIMULATION 66-23
FAX PROGRAM DOWNLOAD. EXECUTING···
```

```
SIMULATION 66-23
FAX PROGRAM DOWNLOAD.
COMPLETE
POWER OFF, AND SET PROTECT  PIN
```

```
SIMULATION 66-23
FAX PROGRAM DOWNLOAD.
FAIL
CHECK PROTECT  PIN
```

66-24

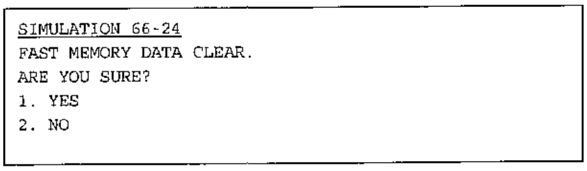
Purpose	Clear
Function (Purpose)	Used to clear the FAST memory data. (Only when FAX is installed)
Section	FAX
Item	Data

Operation/Procedure

1) Select YES/NO of data clear.

1	YES	FAST memory data is cleared.
2	NO	Not cleared.

2) Press [START] key.



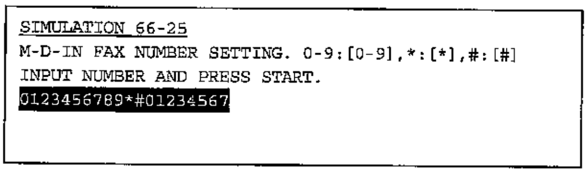
```
SIMULATION 66-24
FAST MEMORY DATA CLEAR.
ARE YOU SURE?
1. YES
2. NO
```

66-25

Purpose	Setting
Function (Purpose)	Used to register the FAX number for Modem dial-in. (Only when FAX is installed) Not used in the market. (For development)
Section	FAX
Item	Data

Operation/Procedure

1) Enter the Modem dial-in FAX number (1 - 9, 0, *, #) with 10-key.
2) Press [START] key.



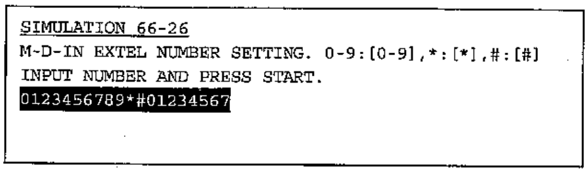
```
SIMULATION 66-25
M-D-IN FAX NUMBER SETTING. 0-9:[0-9],*:[*],#:[#]
INPUT NUMBER AND PRESS START.
0123456789*#01234567
```

66-26

Purpose	Setting
Function (Purpose)	Used to register external telephone numbers for Modem dial-in. (Only when FAX is installed) Not used in the market. (For development)
Section	FAX
Item	Data

Operation/Procedure

1) Enter the Modem dial-in FAX number (1 - 9, 0, *, #) with 10-key.
2) Press [START] key.



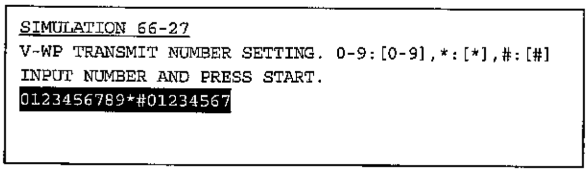
```
SIMULATION 66-26
M-D-IN EXTEL NUMBER SETTING. 0-9:[0-9],*:[*],#:[#]
INPUT NUMBER AND PRESS START.
0123456789*#01234567
```

66-27

Purpose	Setting
Function (Purpose)	Used to register the transfer number for voice warp. (Only when FAX is installed) Not used in the market. (For development)
Section	FAX
Item	Data

Operation/Procedure

1) Enter the voice warp transfer number (1 - 9, 0, *, #) with 10-key.
2) Press [START] key.



```
SIMULATION 66-27
V-WP TRANSMIT NUMBER SETTING. 0-9:[0-9],*:[*],#:[#]
INPUT NUMBER AND PRESS START.
0123456789*#01234567
```

66-28

Purpose	Setting
Function (Purpose)	Used to record voice messages. (Only when FAX is installed.)
Section	FAX
Item	Data

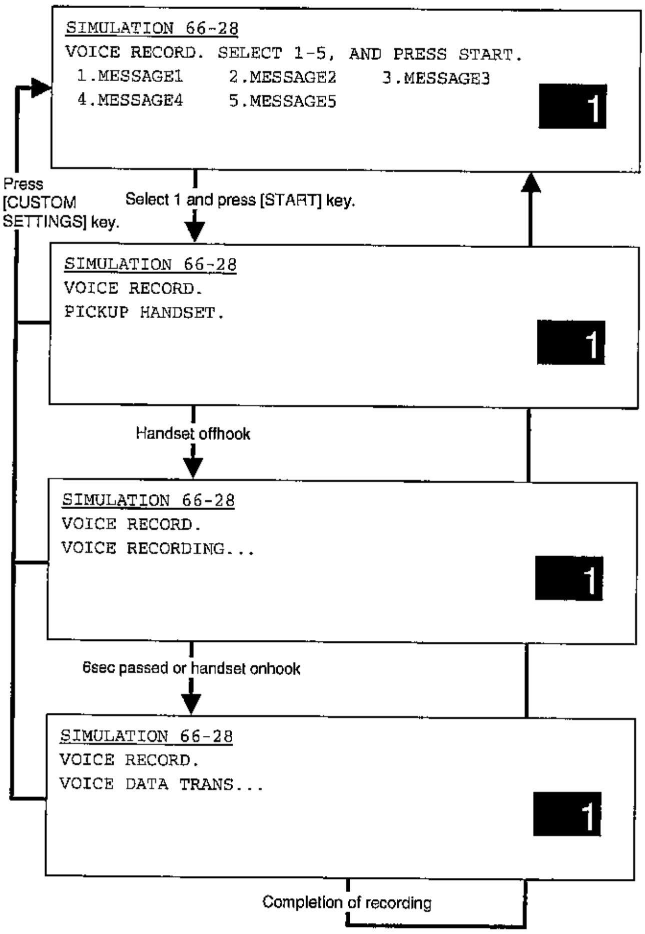
Operation/Procedure

1) Enter the number corresponding to the registration number with 10-key.
2) Use the handset to record a voice message. (Max. 6sec)
3) Onhook the handset. (End)

There are following five kinds of recording.

1	MESSAGE1	Recording No. 1
2	MESSAGE2	Recording No. 2
3	MESSAGE3	Recording No. 3
4	MESSAGE4	Recording No. 4
5	MESSAGE5	Recording No. 5

When [CUSTOMSETTING] key is pressed, recording is interrupted.



```
SIMULATION 66-28
VOICE RECORD. SELECT 1-5, AND PRESS START.
 1.MESSAGE1    2.MESSAGE2    3.MESSAGE3
 4.MESSAGE4    5.MESSAGE5
                                        1
```

```
SIMULATION 66-28
VOICE RECORD.
PICKUP HANDSET.
                                        1
```

```
SIMULATION 66-28
VOICE RECORD.
VOICE RECORDING...
                                        1
```

```
SIMULATION 66-28
VOICE RECORD.
VOICE DATA TRANS...
                                        1
```

Press [CUSTOM SETTINGS] key.
Select 1 and press [START] key.
Handset offhook
6sec passed or handset onhook
Completion of recording

66-29

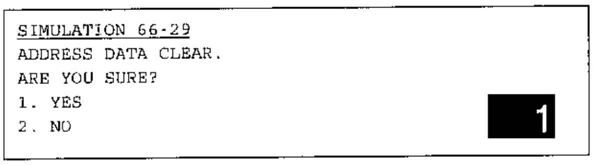
Purpose	Clear
Function (Purpose)	Used to clear data related to an address book (one-touch registration, program registration/expansion, relay memory box registration, each table content).
Section	FAX, Network scanner
Item	Data

Operation/Procedure

1) Select YES/NO of data clear.

1	YES	Address book data is cleared.
2	NO	Not cleared.

2) Press [START] key.



```
SIMULATION 66-29
ADDRESS DATA CLEAR.
ARE YOU SURE?
1. YES
2. NO                                        1
```

66-30

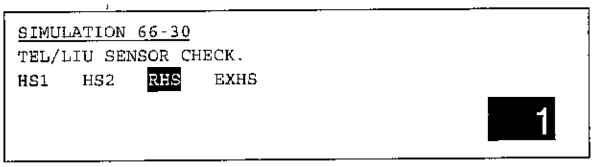
Purpose	Operation test/Check
Function (Purpose)	Used to check the change in the TEL/LIU status.
Section	FAX
Item	Operation

Operation/Procedure

The TEL/LIU state is displayed.

When the state is changed, it is highlighted.

HS1	Polarity reverse signal
HS2	Polarity reverse signal
RHS	Handset hook SW
EXHS	External telephone hook SW



```
SIMULATION 66-30
TEL/LIU SENSOR CHECK.
HS1    HS2    RHS    EXHS
                                             1
```

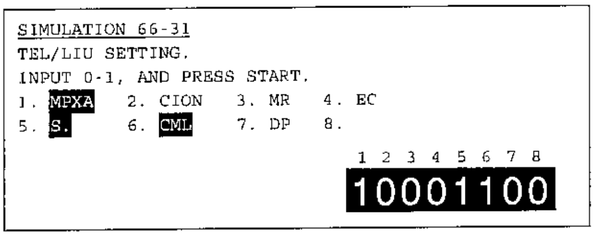
66-31

Purpose	Operation test/Check
Function (Purpose)	Used to check the relay operation.
Section	FAX
Item	Operation

Operation/Procedure

1) Enter the number corresponding to the check item with 10-key.

2) Press [START] key.



```
SIMULATION 66-31
TEL/LIU SETTING.
INPUT 0-1, AND PRESS START.
1. MPXA    2. CION    3. MR    4. EC
5. S.      6. CML     7. DP    8.
                           1 2 3 4 5 6 7 8
                           1 0 0 0 1 1 0 0
```

66-32

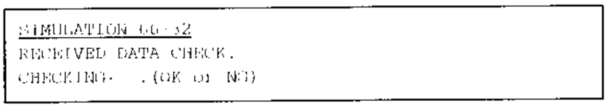
Purpose	Operation test/Check
Function (Purpose)	Used to check the receive data (fixed data) from the line.
Section	FAX
Item	Operation

Operation/Procedure

When check is completed normally, "OK" is displayed. In case of an error, "NG" is displayed.

(Display message)

CHECKING	Checking
OK	Checking completed (OK)
NG	Checking completed (NG)



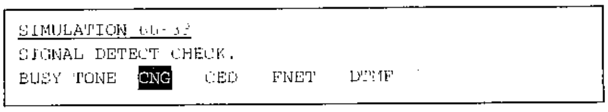
```
SIMULATION 66-32
RECEIVED DATA CHECK.
CHECKING.... (OK or NG)
```

66-33

Purpose	Operation test/Check
Function (Purpose)	Used to check the signal (BUSY TONE/CNG/CED/FNET/DTMF) detection.
Section	FAX
Item	Operation

Operation/Procedure

The detected signal is highlighted.



```
SIMULATION 66-32
SIGNAL DETECT CHECK.
BUSY TONE   CNG    CED    FNET    DTMF
```

66-34

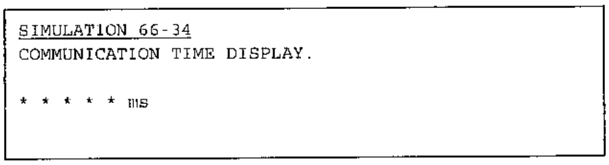
Purpose	Operation test/Check
Function (Purpose)	Used to measure the communication time of test image data.
Section	FAX
Item	Operation

Operation/Procedure

Communication test is performed to measure the time (ms).

Send is made under the following conditions.

Communication means	Memory send
Image quality	Normal text
Density	Light
ECM	ON
Sender record	OFF



```
SIMULATION 66-34
COMMUNICATION TIME DISPLAY.

* * * * * ms
```

66-35

Purpose	Setting
Function (Purpose)	Modem program reloading (Only when FAX is installed) Not used in the market. (For development)
Section	FAX
Item	Data

Operation/Procedure

1) Select YES/NO of Modem program reload.

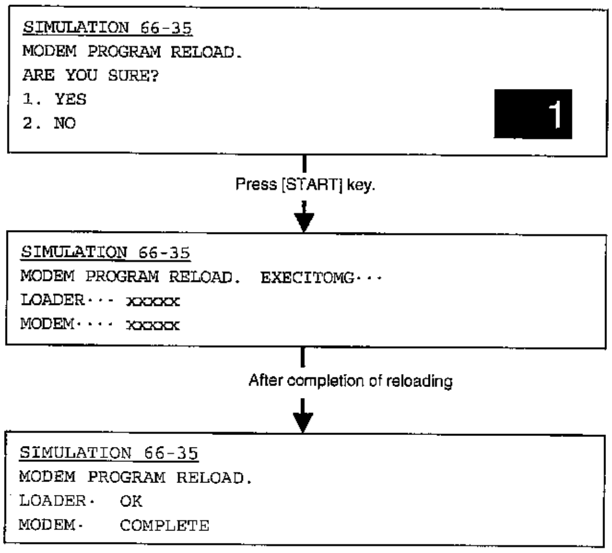
1	YES	Modem block reload is cleared.
2	NO	Not reloaded.

2) Press [START] key.

When reload is completed normally, "OK" is displayed. In case of an error, "CHECK SUM" is displayed.

The result of Modem reload is displayed.

COMPLETE	Reload completed
81	Check sum error
82	Write error
83	Delete error
84	Verify error
NG	Due to loader NG



```
SIMULATION 66-35
MODEM PROGRAM RELOAD.
ARE YOU SURE?
1. YES
2. NO
```

```
SIMULATION 66-35
MODEM PROGRAM RELOAD.  EXECITOMG···
LOADER··· xxxxx
MODEM···· xxxxx
```

```
SIMULATION 66-35
MODEM PROGRAM RELOAD.
LOADER·  OK
MODEM·   COMPLETE
```

66-36

Purpose	Operation test/Check
Function (Purpose)	Used to check interface between MFPC controller and MDMC. (Check of the data line or the command line)
Section	FAX
Item	Operation

Operation/Procedure

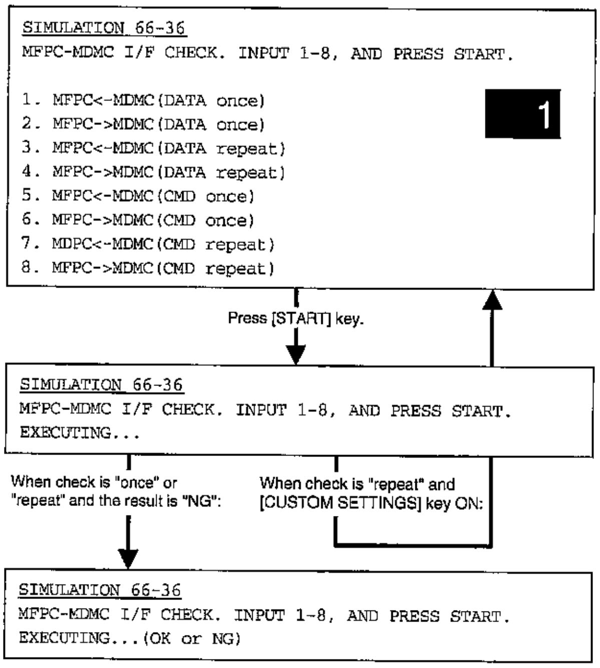
1) Enter the number corresponding to the check mode with 10-key.

1	MFPC ← MDMC	Date line once only
2	MFPC → MDMC	Date line once only
3	MFPC ← MDMC	Data line repeat
4	MFPC → MDMC	Data line repeat
5	MFPC ← MDMC	Command line once only
6	MFPC → MDMC	Command line once only
7	MFPC ← MDMC	Command line repeat
8	MFPC → MDMC	Command line repeat

2) Press [START] key.

When check is completed normally, "OK" is displayed. Incase of an error, "NG" is displayed.

When check is "repeat," the operation is continued until the result is NG or [CUSTOM SETTINGS] key is pressed.



```
SIMULATION 66-36
MFPC-MDMC I/F CHECK. INPUT 1-8, AND PRESS START.

1. MFPC<-MDMC(DATA once)
2. MFPC->MDMC(DATA once)
3. MFPC<-MDMC(DATA repeat)
4. MFPC->MDMC(DATA repeat)
5. MFPC<-MDMC(CMD once)
6. MFPC->MDMC(CMD once)
7. MDPC<-MDMC(CMD repeat)
8. MFPC->MDMC(CMD repeat)
```

```
SIMULATION 66-36
MFPC-MDMC I/F CHECK. INPUT 1-8, AND PRESS START.
EXECUTING...
```

When check is "once" or "repeat" and the result is "NG":
When check is "repeat" and [CUSTOM SETTINGS] key ON:

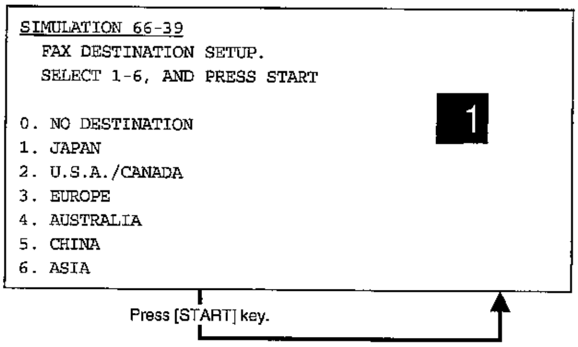
```
SIMULATION 66-36
MFPC-MDMC I/F CHECK. INPUT 1-8, AND PRESS START.
EXECUTING...(OK or NG)
```

66-39

Purpose	Setting
Function (Purpose)	Used to set the destination specifications.
Section	FAX
Item	Specifications Operation

Operation/Procedure

1) Enter the number corresponding to the destination.
2) Press [START] key.



```
SIMULATION 66-39
  FAX DESTINATION SETUP.
  SELECT 1-6, AND PRESS START

0. NO DESTINATION
1. JAPAN
2. U.S.A./CANADA
3. EUROPE
4. AUSTRALIA
5. CHINA
6. ASIA
```

66-60

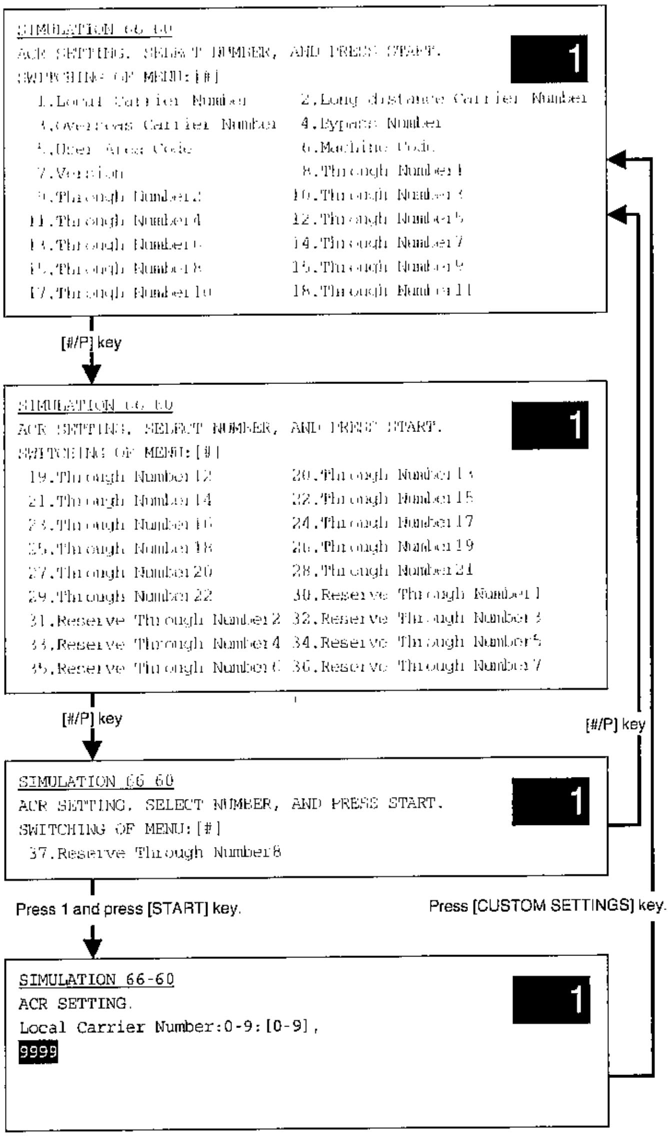
Purpose	Setting
Function (Purpose)	Used to set the ACR data.
Section	FAX
Item	Operation

Operation/Procedure

1) Enter the number corresponding to the set item with 10-key.
   The item list menu can be switched by pressing [P] key.
2) Press [START] key.
3) Enter the set value.
4) Press [START] key.

This simulation can be executed when soft SW 24-4 and 24-5 are set to 1. Display/Not display is switched by soft SW 24-4 and 24-5.

The digit limitation and characters allowed to be inputted depend on the input item.



```
SIMULATION 66-60
ACR SETTING. SELECT NUMBER, AND PRESS START.
SWITCHING OF MENU:[#]
  1.Local Carrier Number        2.Long distance Carrier Number
  3.Overseas Carrier Number     4.Bypass Number
  5.User Area Code              6.Machine Code
  7.Version                     8.Through Number1
  9.Through Number2            10.Through Number3
 11.Through Number4            12.Through Number5
 13.Through Number6            14.Through Number7
 15.Through Number8            16.Through Number9
 17.Through Number10           18.Through Number11
```

```
SIMULATION 66-60
ACR SETTING. SELECT NUMBER, AND PRESS START.
SWITCHING OF MENU:[#]
 19.Through Number12           20.Through Number13
 21.Through Number14           22.Through Number15
 23.Through Number16           24.Through Number17
 25.Through Number18           26.Through Number19
 27.Through Number20           28.Through Number21
 29.Through Number22           30.Reserve Through Number1
 31.Reserve Through Number2    32.Reserve Through Number3
 33.Reserve Through Number4    34.Reserve Through Number5
 35.Reserve Through Number6    36.Reserve Through Number7
```

```
SIMULATION 66-60
ACR SETTING. SELECT NUMBER, AND PRESS START.
SWITCHING OF MENU:[#]
 37.Reserve Through Number8
```

```
SIMULATION 66-60
ACR SETTING.
Local Carrier Number:0-9:[0-9],
9999
```

67

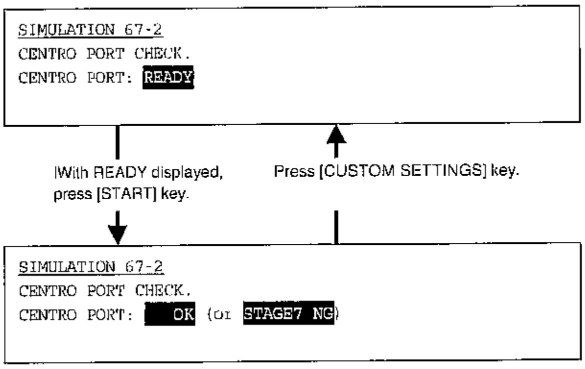
67-2

Purpose	Operation test/Check	
Function (Purpose)	Used to check the operation of the parallel I/F of the printer. (This simulation is for production only, and requires a special tool for execution. Not used in the market.)	
Section	MFP controller	
Item	Operation	Interface/Communication

Operation/Procedure

(Display message)

WAITING	Waiting
READY	Check start OK
OK	Check end (Normal)
STAGE*NG	Check end (Error in stage *. *: 1 - 11)



```
SIMULATION 67-2
CENTRO PORT CHECK.
CENTRO PORT: READY
```

```
SIMULATION 67-2
CENTRO PORT CHECK.
CENTRO PORT:   OK (or STAGE7 NG)
```

With READY displayed, press [START] key.
Press [CUSTOM SETTINGS] key.

67-11

Purpose	Setting	
Function (Purpose)	Used to set YES/NO of the parallel I/F select signal of the printer.	
Section	MFP controller	
Item	Operation	Interface/Communication

Operation/Procedure

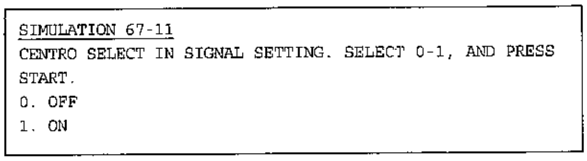
1) Enter the number corresponding to the select IN signal YES/NO setting with 10-key.

▲1

Item		Default
0	OFF	0 (AR-M550U, AR-M620U, AR-M700U)
1	ON	1 (AR-M550N, AR-M620N, AR-M700N)

2) Press [START] key.

When the printer parallel I/F is used and a trouble is generated in the communication between the PC and the printer, change the setting of this simulation.



```
SIMULATION 67-11
CENTRO SELECT IN SIGNAL SETTING. SELECT 0-1, AND PRESS
START.
0. OFF
1. ON
```

67-16

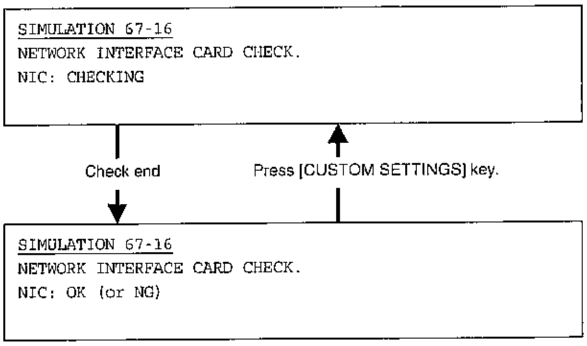
Purpose	Operation test/Check	
Function (Purpose)	Used to check the operation of the network card.	
Section	MFP controller	
Item	Operation	Interface/Communication

Operation/Procedure

During check, "CHECKING" is displayed. When check is completed normally, "OK" is displayed. In case of an error, "NG" is displayed.

(Display message)

CHECKING	Checking
OK	Check end (Normal)
NG	Check end (Error)



```
SIMULATION 67-16
NETWORK INTERFACE CARD CHECK.
NIC: CHECKING
```

```
SIMULATION 67-16
NETWORK INTERFACE CARD CHECK.
NIC: OK (or NG)
```

[9] SELF DIAG MESSAGE AND TROUBLESHOOTING

[Error code]

1. General

When a trouble occurs in the machine or when the life of a consumable part is nearly expired or when the life is expired, the machine detects and displays it on the display section. This allows the user and the serviceman to take the suitable action. In case of a trouble, this feature notifies the occurrence of a trouble and stops the machine to minimize the damage.

2. Function and purpose

1) Securing safety. (The machine is stopped on detection of a trouble.)
2) The damage to the machine is minimized. (The machine is stopped on detection of a trouble.)
3) By displaying the trouble content, the trouble position can be quickly identified. (This allows to perform an accurate repair, improving the repair efficiency.)
4) Preliminary warning of running out of consumable parts allows to arrange for new parts in advance of running out. (This avoids stopping of the machine due to running out the a consumable part.)

3. Self diag message kinds

The self diag messages are classified as shown in the table below.

Class 1	User	Warning of troubles which can be recovered by the user. (Paper jam, consumable part life expiration, etc.)
	Service man	Warning of troubles which can be recovered only by a serviceman. (Motor trouble, maintenance, etc.)
	Other	—
Class 2	Warning	Warning to the user, not a machine trouble (Preliminary warning of life expiration of a consumable part, etc.)
	Trouble	Warning of a machine trouble. The machine is stopped.
	Other	—

4. Self diag operation

A. Self diag operation and related work flow

The machine always monitors its own state.

When the machine recognizes a trouble, it stops the operation and displays the trouble message.

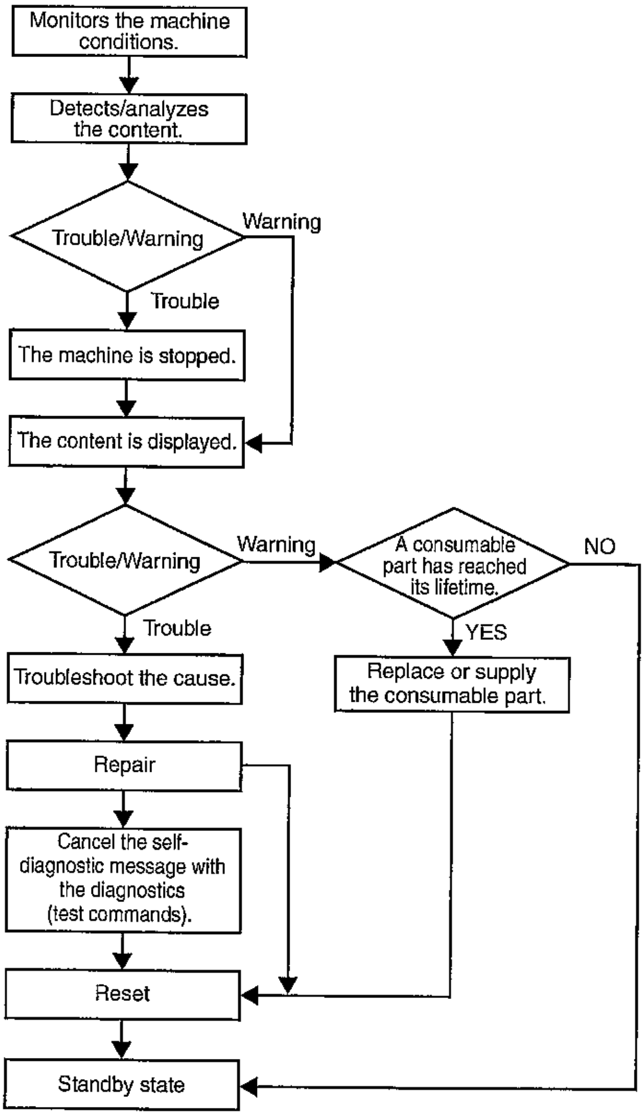
A warning message is displayed when a consumable part life is nearly expired or is expired.

When a warning message is displayed, the machine may be or may not be stopped.

The trouble messages and the warning messages are displayed by the LCD.

Some trouble messages are automatically cleared when the trouble is repaired. Some other troubles must be cleared by a simulation.

Some warning messages of consumable parts are automatically cleared when the trouble is repaired. Some other warning messages must be cleared by a simulation.


Monitors the machine conditions.
Detects/analyzes the content.
Trouble/Warning
Warning
Trouble
The machine is stopped.
The content is displayed.
Trouble/Warning
Warning
A consumable part has reached its lifetime.
NO
Trouble
YES
Troubleshoot the cause.
Replace or supply the consumable part.
Repair
Cancel the self-diagnostic message with the diagnostics (test commands).
Reset
Standby state

5. Breakdown sequence

A. Breakdown mode process

(1) Breakdown mode list

There are following cases of the breakdown mode.

(The machine can be operated under some conditions.)	Judgment block	Trouble code	Operation enable mode						
			Copy read (including interrupt)	FAX send	Email receive	FAX print	Print	List print	Notification to FASThost
(SPF breakdown)	Scanner	U5	Δ1	Δ1	Δ1	○	○	○	○
Scanner section breakdowns (Mirror motor, lens, copy lamp)	Scanner	L1, L3, U2 (80, 81)	×	×	×	○	○	○	○
FAX board breakdown	MFP control/ FAX	F6, F7	○	×	○	×	○	○	×
FAX power OFF	MFP control		○	×	○	×	○	○	×
Network error	MFP control	CE	○	○	×	○	○	○	×
Staple breakdown	PCU	F1 (10)	Δ2	○	○	Δ2	Δ2	Δ2	○
Paper feed tray breakdown	PCU	F3, U6 (LCC)	Δ3	○	○	Δ3	Δ3	Δ3	○
(Process control breakdown)	PCU	F2 (31, 32, 37)	Δ4	○	○	Δ4	Δ4	Δ4	○
PCU section breakdowns (Motor, fusing section, etc.)	PCU	C1, C2, C3, H2, H3, H4, H5, L4 (excluding L4-30), L8, U2 (90, 91), F2, F4	×	○	○	×	×	×	○
After-process breakdown	PCU	F1	Δ5	○	○	Δ5	Δ5	Δ5	○
Inserter trouble (excluding communication trouble)	PCU	F1 (61, 62)	Δ7	○	○	Δ7	Δ7	Δ7	○
Laser breakdown	PCU	E7 (02 only), L6	×	○	○	×	×	×	○
HDD breakdown	MFP control	E7 (03)	×	×	×	×	×	×	○
CCD breakdowns (Shading, etc.)	Scanner	E7 (10, 11, 12, 14)	×	×	×	○	○	○	○
CIS breakdowns (Shading, etc.)	Scanner	E6 (10, 11, 14)	Δ6	Δ6	Δ6	○	○	○	○
Scanner communication trouble	MFP control	E7 (80)	×	×	×	○	○	○	○
PCU communication trouble	MFP control	E7 (90)	×	×	×	×	×	×	○
FAX backup battery voltage fall	MFP control	U1 (01, 02)	○	×	×	○	○	○	○
HDD registration data sum error	MFP control	U2 (50)	○	×	×	○	○	○	○
Thermistor trouble (trouble history)	PCU	F2 (39, 46, 47, 48)	○	○	○	○	○	○	○

(The machine cannot be operated.)

Memory	MFP control	U2 (00, 11, 12, 22, 23)	×	×	×	×	×	×	○
External communication disable (RICA)	MFP control	U7, PF	×	×	×	×	×	×	○
Image memory trouble, decode error	MFP control	E7 (01, 06)	×	×	×	×	×	×	○
Incompatibility check error	MFP control/ PCU	E7 (50, 55, 56, 57, 60, 65, 66, 67)	×	×	×	×	×	×	×
Controller fan motor trouble	MFP control	L4-30	×	×	×	×	×	×	×

* For FAX communication, refer to the sheet of "Call request and Call-in."

* The machine may be operated under some conditions.

Δ1: When detected except when in a job, the machine can be operated in the OC mode.

Δ2: Can be operated except in the staple mode.

Δ3: When detected except in a job, the machine can be operated except with the breakdown tray.

Δ4: Can be operated with some restriction on the image quality depending on the destination. (Low density print) * Refer to the process control trouble operation table below.

Δ5: When detected except in a job, can be operated except in the trouble paper exit section.

Δ6: When detected except in a job, can be operated in the single surface scan mode.

Δ7: Can be operated except in the inserter tray, if the error is detected in the standby mode.

* Process control trouble operation table

Trouble code	Error content	Japan/SEC	Europe/ Others
F2-31	Process control sensor gain adjustment failure	Machine stop	Low density copy
F2-32	Mark detection failure	Low density copy	Low density copy
F2-37	Mark sensor gain adjustment failure	Machine stop	Low density copy

⚠: Feb. 9 2004

(2) Trouble mode process

The machine can be operated under some conditions.

Operations except for the trouble mode are enabled (READY). For the modes which cannot be operated, only setting is enabled and a message is given to show the operations are disabled. (NOT READY in this case)

(Display)

When a trouble occurs, a dialog is shown. In the mode where the operation is enabled, the OK button is added to the message. In the mode where the operation is disabled, the OK button is not shown and the display is kept until the trouble is canceled.

(3) Writing to the trouble memory

In case of a same trouble in this machine, selection is made with the simulation to write into the trouble memory or not. If this simulation is set, any trouble is written into the trouble memory unconditionally.

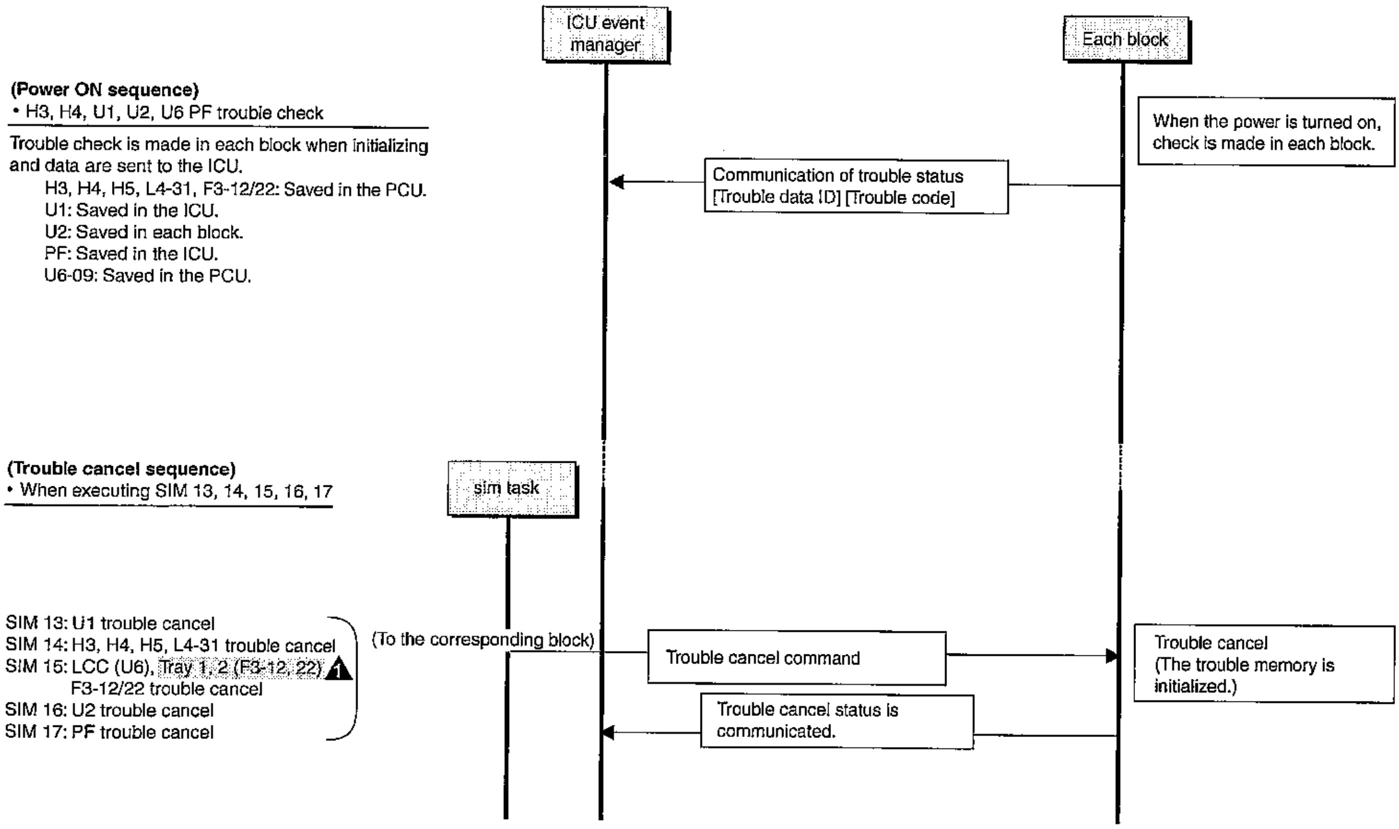
(SIMULATION. 26-35)

0: A same trouble as the previous one is not written. (Default)

1: Any trouble is written into the trouble memory unconditionally.

B. Power ON trouble detection sequence.

- When the power is turned ON, if H3, H4, H5, U1, U2, PF, L4-31, F3-12/22, or U6 (LCC-related sub code 09 only) is saved, a trouble code is immediately displayed. E7 (50, 55, 56, 57, 60, 65, 66, 67) trouble is not saved.



(Power ON sequence)
- H3, H4, U1, U2, U6 PF trouble check

Trouble check is made in each block when initializing and data are sent to the ICU.
H3, H4, H5, L4-31, F3-12/22: Saved in the PCU.
U1: Saved in the ICU.
U2: Saved in each block.
PF: Saved in the ICU.
U6-09: Saved in the PCU.

(Trouble cancel sequence)
- When executing SIM 13, 14, 15, 16, 17

SIM 13: U1 trouble cancel
SIM 14: H3, H4, H5, L4-31 trouble cancel
SIM 15: LCC (U6), Tray 1, 2 (F3-12, 22) ⚠
F3-12/22 trouble cancel
SIM 16: U2 trouble cancel
SIM 17: PF trouble cancel

When the power is turned on, check is made in each block.

Communication of trouble status [Trouble data ID] [Trouble code]

(To the corresponding block)

Trouble cancel command

Trouble cancel (The trouble memory is initialized.)

Trouble cancel status is communicated.

6. Communication in trouble

A. FAX call request/call-in specifications

Trouble	Send reservation	Print	Call request	Call-in	Precaution
PCU breakdowns (Incompatibility check error: E7 (50, 56, 57, 65, 66, 67))	○	×	○	Note	There is a risk that the memory is full.
F3, U6 (Paper feed tray breakdown)	○	Δ2	○	○	
F1 (Paper exit section breakdown)	○	Δ4	○	○	
Scanner breakdowns	×	○	○	○	
F6, F7 (FAX breakdown)	×	×	×	×	
E7 (01, 06) (MFP control breakdown)	×	×	×	×	
U2 (00, 11, 12, 22, 23, 50) (MFP control memory error)	×	×	×	×	
U7 (RIC external communication disable), PF	×	×	×	×	Inhibition of use by a customer having outstanding fee
U1 (Backup battery voltage fall)	×	Δ3	× Note	×	Transfer enable
E7 (50, 55, 56, 57, 60, 65, 66, 67) (Incompatibility check error)	×	×	×	×	
L4-30 (Controller fan motor trouble)	×	×	×	×	
Door open	○	×	○	○Note	There is a risk that the memory is full.
Toner empty	○	×	○	○Note	There is a risk that the memory is full.
Process cartridge uninstalled, etc.	○	×	○	○Note	There is a risk that the memory is full.
Paper empty	○	×	○	○Note	There is a risk that the memory is full.
Paper JAM	○	×	○	○Note	There is a risk that the memory is full.
Document JAM	×	○	○	○	
Simulation	×	×	×	×	
Key operation (Communication disable)	×	×	×	×	

Δ2: Enable except for the trouble tray

※ When, however, a paper feed tray trouble is detected during a job, the engine is stopped and printing is disabled.

Δ3: The display goes to the FAX status check menu and the list can be printed.: The received document is outputted.

Δ4: Paper exit is enabled except for the trouble paper exit tray

※ When, however, a paper feed tray trouble is detected during a job, the engine is stopped and printing is disabled.

7. Trouble kind

Trouble code		Trouble content	Remarks	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code								
C1	00	MC trouble		PCU			●		
CE	00	Another communication error occurs.		Network					
CE	01	The network card is not installed or broken.		Network					
CE	02	The specified mail server or the FTP server is not found.		Network					
CE	03	The specified server suspends response during transmission of images.		Network					
CE	04	The entered account name of the FTP server or the password for authentication is invalid.		Network					
CE	05	The entered directory of the FTP server is invalid.		Network					
CE	06	The specified mail server (POP3) is not found.		Network					
CE	07	The entered account name of the POP3 server or the password for authentication is invalid.		Network					
CE	08	The specified mail server (POP3) suspends response.		Network					
CH	–	Door open (CH ON)		PCU					
E6	11	CIS shading trouble (White correction)		Scanner			●		
E6	14	CIS-ASIC communication trouble		Scanner			●		
E7	01	System data trouble		MFP control	–	–	–	–	–
E7	02	Laser trouble		PCU			●		
E7	03	HDD trouble		MFP control			●		
E7	06	Decode error trouble		MFP control			●		
E7	10	CCD shading trouble (Black correction)		Scanner			●		
E7	11	CCD shading trouble (White correction)		Scanner			●		
E7	12	CCD shading trouble (White correction center adjustment)		Scanner			●		
E7	14	CCD-ASIC communication trouble		Scanner			●		
E7	50	LSU connection trouble		PCU			●		
E7	55	Incompatibility check (Engine (PCU) detection)		PCU			●		

⚠ : Feb. 9 2004

Trouble code		Trouble content	Remarks	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code								
E7	56	Incompatibility check (Engine (PCU) detection)		PCU			●		
E7	57	Incompatibility check (Engine (PCU) detection)		PCU			●		
E7	60	Controller connection trouble		MFP control			●		
E7	65	Incompatibility check (MFP controller detection)		MFP control			●		
E7	66	Incompatibility check (MFP controller detection)		MFP control			●		
E7	67	Incompatibility check (MFP controller detection)		MFP control			●		
E7	80	Scanner PWB communication trouble		MFP control			●		
E7	90	PCU PWB communication trouble		MFP control			●		
EE	EL	Auto developer adjustment trouble (Overtoner error)	During SIM only	PCU					●
EE	EU	Auto developer adjustment trouble (Undertoner error)	During SIM only	PCU					●
F1	00	Finisher communication trouble		PCU		●			
F1	02	Finisher transport motor abnormality		PCU		●			
F1	03	Finisher oscillation motor trouble		PCU		●			
F1	08	Finisher staple shift motor trouble		PCU		●			
F1	09	Finisher load capacity sensor trouble		PCU		●			
F1	10	Finisher/staple motor trouble		PCU		●			
F1	11	Finisher/pusher motor trouble		PCU		●			
F1	15	Finisher elevator motor trouble		PCU		●			
F1	19	Finisher/jogger motor trouble		PCU		●			
F1	31	Finisher saddle folding motor trouble		PCU		●			
F1	32	Finisher-saddle communication trouble		PCU		●			
F1	33	Finisher/punch shift motor trouble		PCU		●			
F1	34	Finisher/punch motor trouble		PCU		●			
F1	37	Finisher/backup RAM data trouble		PCU		●			
F1	38	Finisher/punch backup RAM data trouble		PCU		●			
F1	41	Finisher/saddle positioning plate motor trouble		PCU		●			
F1	42	Finisher/saddle guide motor trouble		PCU		●			
F1	43	Finisher/saddle alignment motor trouble		PCU		●			
F1	44	Finisher/saddle rear staple motor trouble		PCU		●			
F1	45	Finisher/saddle front staple motor trouble		PCU		●			
F1	46	Finisher/saddle push motor trouble		PCU		●			
F1	51	Finisher/sensor connector connection trouble		PCU		●			
F1	52	Finisher/micro switch trouble		PCU		●			
F1	60	Finisher-inserter communication trouble		PCU		●			
F1	61	Inserter/EEPROM trouble		PCU		●			
F1	62	Inserter/reverse sensor trouble		PCU		●			
F2	00	Toner concentration sensor open		PCU					●
F2	02	Toner supply abnormality		PCU					●
F2	04	Improper cartridge (Destination error, life cycle error)		PCU					●
F2	05	CRUM error		PCU					●
F2	31	Process control trouble (Photoconductor surface reflection rate abnormality)		PCU					●
F2	32	Process control trouble (Drum marking scan failure)		PCU					●
F2	37	Drum marking sensor gain adjustment error		PCU					●
F2	39	Process thermistor breakdown		PCU					●
F2	46	Developing thermistor breakdown		PCU					●
F2	48	Developing humidity sensor break down		PCU					●
F3	12	Tray 1 lift-up trouble		PCU	●				
F3	22	Tray 2 lift-up trouble		PCU	●				
F3	32	Tray 3 lift-up trouble		PCU	●				
F3	42	Tray 4 lift-up trouble		PCU	●				
F4	38	38 (V) voltage trouble		PCU			●		
F6	00	FAX board communication trouble		MFP control				●	
F6	01	FAX expansion flash ROM abnormality		MFP control				●	
F6	04	FAX modem operation abnormality		FAX				●	
F6	20	FAX write protect cancel		FAX				●	
F6	21	Combination error of TEL/LIU PWB and software		FAX				●	

Trouble code		Trouble content	Remarks	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code								
F6	97	FAX-BOX incompatibility trouble		FAX				●	
F6	98	Combination error of the FAX-BOX destination information and the machine destination information		FAX				●	
F7	01	FAX board EEPROM read/write error		FAX				●	
F9	02	PRT centro port check error		MFP control			●		
H2	00	Thermistor open (HL1)		PCU	●				
H2	01	Thermistor open (HL2)		PCU	●				
H2	02	Thermistor open (HL3)		PCU	●				
H3	00	Heat roller high temperature detection (HL1)		PCU	●				
H3	01	Heat roller high temperature detection (HL2)		PCU	●				
H3	02	Heat roller high temperature detection (HL3)		PCU	●				
H4	00	Heat roller low temperature detection (HL1)		PCU	●				
H4	01	Heat roller low temperature detection (HL2)		PCU	●				
H4	02	Heat roller low temperature detection (HL3)		PCU	●				
H5	01	5-time continuous POD not-reached JAM detection		PCU	●				
L1	00	Scanner feed trouble		Scanner	●				
L3	00	Scanner return trouble		Scanner	●				
L4	01	Main motor lock detection		PCU			●		
L4	02	Drum motor lock detection		PCU			●		
L4	03	Fusing motor lock detection		PCU			●		
L4	04	Developing motor lock detection		PCU			●		
L4	06	Transfer belt separation motor trouble		PCU			●		
L4	30	Controller fan motor trouble		MFP control			●		
L4	31	Paper discharging fan trouble		MFP control			●		
L6	10	Polygon motor lock detection		PCU			●		
L8	01	No full wave signal		PCU			●		
PC	–	Personal counter uninstalled		MFP control					
PF	00	RIC copy inhibit command receive		MFP control			●		
U1	01	FAX battery abnormality		MFP control				●	
U1	02	RTC read error (combined use as FAX, on MFP control PWB)		MFP control				●	
U2	00	EEPROM read/write error (MFP control)		MFP control			●		
U2	11	Counter check sum error (MFP control EEPROM)		MFP control			●		
U2	12	Adjustment value check sum error (MFP control EEPROM)		MFP control			●		
U2	22	MFPC section SRAM memory check sum error		MFP control				●	
U2	23	MFPC section SRAM memory individual data check sum error		MFP control				●	
U2	50	HDD section individual data check sum error		MFP control				●	
U2	80	Scanner section EEPROM read/write error		Scanner			●		
U2	81	Scanner section memory sum check error		Scanner			●		
U2	90	PCU section EEPROM read/write error		PCU			●		
U2	91	PCU section memory sum check error		PCU			●		
U5	30	SPF tray lift-up trouble		Scanner	●				
U5	31	SPF tray lift-down trouble		Scanner	●				
U6	09	LCC lift motor trouble		PCU		●			
U6	20	LCC communication trouble		PCU		●			
U6	21	LCC transport motor trouble		PCU		●			
U6	22	LCC 24V power abnormality addition		PCU		●			
U7	00	PC/Modem communication trouble		MFP control			●		
– –	–	Auditor NOT READY		MFP control					

8. Details

Main code	Sub code	Title	MC trouble	
C1	00	Phenomenon	Display	Lamp
				Message
			Details	MC trouble Three successive MHV-T signals are detected during operation of MHV. Main charger output abnormality (Output open) A trouble signal is outputted from the high voltage transformer.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	The main charger is not installed properly. The main charger is not assembled properly.
			Remedy	Use SIM 8-2 to check the main charger output. Main charger disconnection check
			Note	
		Case 2	Trouble position/ Cause	The high voltage transformer connector is disconnected. The high voltage harness is disconnected or broken.
			Remedy	Connection check
			Note	
		Case 3	Trouble position/ Cause	High voltage unit trouble
			Remedy	Replace the high voltage unit.
			Note	

Main code	Sub code	Title	·Another communication error occurs.	
CE	00	Phenomenon	Display	Lamp
				Message
			Details	Communication error
			Section	
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection of the network cable
			Remedy	Check the connection of the network cable.
			Note	

Main code	Sub code	Title	The network card is not installed or broken.	
CE	01	Phenomenon	Display	Lamp
				Message
			Details	Network card connection trouble
			Section	
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	The network card is not installed on the controller.
			Remedy	Check that the network card is installed on the controller.
			Note	
		Case 2	Trouble position/ Cause	Network card control PWB trouble
			Remedy	1. Output the NIC Config. Page to check the NIC version. 2. Replace the NIC.
			Note	

Main code	Sub code	Title	The specified mail server or the FTP server is not found.	
CE	02	Phenomenon	Display	Lamp
				Message
			Details	The specified mail server or the FTP server is not found.
			Section	
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection of the network cable
			Remedy	Check that the network cable is properly connected.
			Note	
		Case 2	Trouble position/ Cause	Network setup trouble
			Remedy	1. Check that the connected network supports TCP/IP protocol. 2. As Primary/Secondary E-mail Server Address or Destination from Web Page 3. When the above address is described with the Hostname, check that the DNS server is properly set or not.
			Note	

Main code	Sub code	Title	The specified mail server or the FTP server is not found.	
CE	02	Case 3	Trouble position/ Cause	An error occurs in the SMTP server/ FTP server/ NTS.
			Remedy	Check the SMTP server/ FTP server/ NTS for any trouble.
			Note	

Main code	Sub code	Title	The specified server suspends response during transmission of images.	
CE	03	Phenomenon	Display	Lamp
				Message
			Details	The specified server suspends response during transmission of images.
			Section	
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection of the network cable
			Remedy	Check that the network cable is properly connected.
			Note	
		Case 2	Trouble position/ Cause	An error occurs in the SMTP server/ FTP server/ NTS.
			Remedy	Check the SMTP server/ FTP server/ NTS for any trouble.
			Note	

Main code	Sub code	Title	The entered account name of the FTP server or the password for authentication is invalid.	
CE	04	Phenomenon	Display	Lamp
				Message
			Details	The entered account name of the FTP server or the password for authentication is invalid.
			Section	
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection of the network cable
			Remedy	Check that the network cable is properly connected.
			Note	
		Case 2	Trouble position/ Cause	Improper registration of the account name or improper password registered in the FTP server as the destination
			Remedy	Check the account name or the password registered in the FTP server as the destination.
			Note	

Main code	Sub code	Title	The entered directory of the FTP server is invalid.	
CE	05	Phenomenon	Display	Lamp
				Message
			Details	The entered directory of the FTP server is invalid.
			Section	
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection of the network cable
			Remedy	Check that the network cable is properly connected.
			Note	
		Case 2	Trouble position/ Cause	Check for existence of the directory name in the FTP server registered as the destination.
			Remedy	Check for existence of the directory name in the FTP server registered as the destination.
			Note	

Main code	Sub code	Title	The specified mail server (POP3) is not found.	
CE	06	Phenomenon	Display	Lamp
				Message
			Details	The specified mail server (POP3) is not found. POP3 server access error
			Section	
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection of the network cable
			Remedy	Check connection of the network cable.
			Note	
		Case 2	Trouble position/ Cause	Network setup trouble
			Remedy	1. Check that the connected network supports TCP/IP protocol. 2. Check on the Web page that the POP3 server address is correctly set. 3. When the above address is described with the Hostname, check that the DNS server is properly set or not.
			Note	
		Case 3	Trouble position/ Cause	An error occurs in the POP3 server.
			Remedy	Check for any error in the POP3 server.
			Note	

Main code	Sub code	Title	**The entered account name of the POP3 server or the password for authentication is invalid.**	
CE	**07**	Phenomenon	Display	Lamp
				Message
			Details	The entered account name of the POP3 server or the password for authentication is invalid. POP3 server authentication check error
			Section	
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection of the network cable
			Remedy	Check connection of the network cable.
			Note	
		Case 2	Trouble position/ Cause	Improper account name or password registered in the POP3 server
			Remedy	Check that the account name or the password registered for the POP3 server is correct.
			Note	

Main code	Sub code	Title	**The specified mail server (POP3) suspends response.**	
CE	**08**	Phenomenon	Display	Lamp
				Message
			Details	The specified mail server (POP3) suspends response. POP3 server time-out error
			Section	
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection of the network cable
			Remedy	Check connection of the network cable.
			Note	
		Case 2	Trouble position/ Cause	
			Remedy	An error occurs in the POP3 server.
			Note	Check for any error in the POP3 server.

Main code	Sub code	Title	**CIS shading trouble (White correction)**	
E6	**11**	Phenomenon	Display	Lamp
				Message
			Details	CIS shading trouble (White correction) When the power is turned on or when the proper gain setup value is not obtained with SIM 63-2 CIS shading (Retry number: 256 times): CIS white reference plate scan level is abnormal when the lamp is lighted.
			Section	Scanner
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Defective installation of the harness to the CIS unit CIS unit abnormality
			Remedy	CIS unit harness check
			Note	
		Case 2	Trouble position/ Cause	Reference white plate dirt
			Remedy	Clean the reference white plate.
			Note	
		Case 3	Trouble position/ Cause	CIS lighting trouble
			Remedy	Use SIM 5-3 to check the light quantity of CIS.
			Note	
		Case 4	Trouble position/ Cause	Scanner PWB abnormality
			Remedy	Scanner PWB check
			Note	

Main code	Sub code	Title	**CIS communication trouble**	
E6	**14**	Phenomenon	Display	Lamp
				Message
			Details	CIS communication trouble When an error occurs in an access check to the CIS-ASIC on turning on the power or closing the DSFP cover. (Retry number: 5 times) Communication trouble between the scanner PWB and the CIS-ASIC. (Clock synchronization)
			Section	Scanner
			Operation mode	
			Note	

Main code	Sub code	Title	**CIS communication trouble**	
E6	**14**	Case 1	Trouble position/ Cause	Defective installation of the harness to the CIS unit
			Remedy	Check the harness connected to the CIS unit.
			Note	
		Case 2	Trouble position/ Cause	CIS unit abnormality
			Remedy	CIS unit check
			Note	
		Case 3	Trouble position/ Cause	Scanner PWB abnormality
			Remedy	Scanner PWB check
			Note	

Main code	Sub code	Title	**System data trouble**	
E7	**01**	Phenomenon	Display	Lamp
				Message
			Details	While reading/writing the HDD system area data, the HDD returns an error response or no response at all for longer than 30 seconds.
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	No HDD is installed on the MFP control PWB.
			Remedy	Check installation status of the HDD on the MFP control PWB.
			Note	
		Case 2	Trouble position/ Cause	HDD does not properly function.
			Remedy	• CHECK connection between the HDD and MFP control. • Perform an HDD read/ write test using SIM 62-2/3. • Replace HDD.
			Note	
		Case 3	Trouble position/ Cause	MFP control PWB abnormality
			Remedy	Replace the MFP control PWB.
			Note	

Main code	Sub code	Title	**Laser trouble**	
E7	**02**	Phenomenon	Display	Lamp
				Message
			Details	Laser trouble The BD signal from the LSU is kept OFF or ON. When the polygon motor rotation is started and three successive BDT signals of I/O ASIC are detected after forced lighting of laser.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	The connector to the LSU or the harness in the LSU is disconnected or broken.
			Remedy	Check for disconnection of the connector to the LSU.
			Note	
		Case 2	Trouble position/ Cause	The polygon motor does not rotate properly.
			Remedy	Check that the polygon motor rotated properly or not.
			Note	
		Case 3	Trouble position/ Cause	The position of the laser home position sensor in the LSU is shifted.
			Remedy	Use SIM 61-1 to check the LSU operation.
			Note	
		Case 4	Trouble position/ Cause	A proper voltage is not supplied to the power line of the laser.
			Remedy	Replace the LSU unit.
			Note	
		Case 5	Trouble position/ Cause	Defective lighting of the laser emitting diode
			Remedy	Check lighting of the laser emitting diode.
			Note	
		Case 6	Trouble position/ Cause	PCU PWB abnormality
			Remedy	Replace the PCU PWB.
			Note	
		Case 7	Trouble position/ Cause	MFP control ASIC PWB abnormality
			Remedy	Replace the MFP control PWB.
			Note	

Main code	Sub code	Title	HDD trouble	
E7	03	Phenomenon	Display	Lamp
				Message
			Details	HDD trouble Data abnormality in the HDD file management area (cluster chain corrupted) The HDD sends an error response or does not respond for 30 sec.
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	The HDD is not installed properly to the MFP control PWB.
			Remedy	Check installation of the HDD to the MFP control PWB.
			Note	
		Case 2	Trouble position/ Cause	The HDD of the MFP control PWB does not operate properly.
			Remedy	Check connection of the harness to the HDD of the MFP control PWB. Use SIM 62-2, -3 to check read/write of the HDD. Replace the HDD.
			Note	
		Case 3	Trouble position/ Cause	MFP control ASIC PWB abnormality
			Remedy	Replace the MFP control PWB.
			Note	

Main code	Sub code	Title	Decode error trouble	
E7	06	Phenomenon	Display	Lamp
				Message
			Details	Decode error trouble A decode error occurs in making an image.
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Garbled data in input from PCI to PM DM trouble Data are garbled in image compression/transfer.
			Remedy	Check installation of the PWB. (PCI bus) If the job at occurrence is FAX, check installation of the FAX PWB. For the other cases, check the MFP control PWB.
			Note	
		Case 2	Trouble position/ Cause	MFP control ASIC PWB abnormality
			Remedy	Replace the MFP control PWB.

Main code	Sub code	Title	CCD shading trouble (Black correction)	
E7	10	Phenomenon	Display	Lamp
				Message
			Details	Shading trouble (Black correction) CCD black scan level abnormality when the copy lamp is turned off. When the proper offset setup value is not obtained at turning on the power or CCD shading with SIM 63-2.
			Section	Scanner
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Defective installation of the flat cable to the CCD unit
			Remedy	Check installation of the flat cable to the CCD unit.
			Note	
		Case 2	Trouble position/ Cause	CCD unit abnormality
			Remedy	CCD unit check
			Note	
		Case 3	Trouble position/ Cause	Scanner PWB abnormality
			Remedy	Scanner PWB check
			Note	

Main code	Sub code	Title	**CCD shading trouble (White correction all pixel adjustment)**	
E7	**11**	Phenomenon	Display	Lamp
				Message
			Details	Shading trouble (White correction all pixel adjustment) The CCD white reference plate scan level abnormality when lighting the copy lamp When the proper gain setup value is not obtained at turning on the power or CCD shading with SIM 63-2.
			Section	Scanner
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Mirror, lens, reference white plate dirt
			Remedy	Clean the mirror, the lens, and the reference white plate.
			Note	
		Case 2	Trouble position/ Cause	Copy lamp lighting abnormality
			Remedy	Check the light quantity and lighting of the copy lamp. (SIM 5-3)
			Note	
		Case 3	Trouble position/ Cause	Defective installation of the flat cable to the CCD unit Improper installation of the CCD unit CCD unit abnormality
			Remedy	CCD unit check
			Note	
		Case 4	Trouble position/ Cause	Scanner PWB abnormality
			Remedy	Scanner PWB check
			Note	

Main code	Sub code	Title	**CCD shading trouble (White correction center adjustment)**	
E7	**12**	Phenomenon	Display	Lamp
				Message
			Details	Shading trouble (White correction center adjustment) The CCD white reference plate scan level abnormality when lighting the copy lamp When the proper gain setup value is not obtained at turning on the power or CCD shading with SIM 63-2.
			Section	Scanner
			Operation mode	
			Note	

Main code	Sub code	Title	**CCD shading trouble (White correction center adjustment)**	
E7	**12**	Case 1	Trouble position/ Cause	Mirror, lens, reference white plate dirt
			Remedy	Clean the mirror, the lens, and the reference white plate.
			Note	
		Case 2	Trouble position/ Cause	Copy lamp lighting abnormality
			Remedy	Check the light quantity and lighting of the copy lamp. (SIM 5-3)
			Note	
		Case 3	Trouble position/ Cause	Defective installation of the flat cable to the CCD unit Improper installation of the CCD unit CCD unit abnormality
			Remedy	CCD unit check
			Note	
		Case 4	Trouble position/ Cause	Scanner PWB abnormality
			Remedy	Scanner PWB check
			Note	

Main code	Sub code	Title	**CCD communication trouble**	
E7	**14**	Phenomenon	Display	Lamp
				Message
			Details	CCD communication trouble Communication trouble between the scanner PWB and the CCD-ASIC. (Clock synchronization) When an error occurs in the access check to the CCD-ASIC executed at turning on the power.
			Section	Scanner
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Defective installation of the harness connected to the CCD unit
			Remedy	Check the harness connected to the CCD unit.
			Note	
		Case 2	Trouble position/ Cause	CCD unit abnormality
			Remedy	CCD unit check
			Note	
		Case 3	Trouble position/ Cause	Scanner PWB abnormality
			Remedy	Scanner PWB check
			Note	

Main code	Sub code	Title	**LSU connection trouble**	
E7	50	Phenomenon	Display	Lamp
				Message
			Details	LSU connection trouble The LSU connected does not conform to the machine specifications. When the combination of the pattern of an input port on the PCU and the pattern of a port connected to the LSU is not proper.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	LSU connection trouble
			Remedy	Check connection between the PCU and the LSU and the harness.
			Note	
		Case 2	Trouble position/ Cause	PCU PWB trouble LSU trouble
			Remedy	Check the LSU. Check the PCU.
			Note	

Main code	Sub code	Title	**Incompatibility check (Engine (PCU) detection)**	
E7	55	Phenomenon	Display	Lamp
	56			Message
	57		Details	Incompatibility check trouble An error is detected in the internal incompatibility check in the engine (PCU).
			Section	Engine (PCU)
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	PCU PWB trouble or a improper PCU PWB has been installed.
			Remedy	Check the PCU PWB.
			Note	

Main code	Sub code	Title	**Controller connection trouble**	
E7	60	Phenomenon	Display	Lamp
				Message
			Details	Controller connection trouble Incompatibility trouble between the controller and the engine
			Section	Controller
			Operation mode	
			Note	

Main code	Sub code	Title	**Controller connection trouble**	
E7	60	Case 1	Trouble position/ Cause	Improper combination of the controller PWB and the engine
			Remedy	Check the controller PWB. Check combination of the controller PWB and the engine.
			Note	

Main code	Sub code	Title	**Incompatibility check (MFP controller detection)**	
E7	65	Phenomenon	Display	Lamp
	66			Message
	67		Details	Incompatibility check trouble An error is detected in the internal incompatibility check in the MFP control PWB.
			Section	MFP control PWB
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	MFP control PWB trouble or a improper MFP control PWB has been installed.
			Remedy	Check the MFP control PWB and repair it as required.
			Note	

Main code	Sub code	Title	**Communication trouble between the MFP control and the scanner (MFP control detection)**	
E7	80	Phenomenon	Display	Lamp
				Message
			Details	Communication trouble between the MFP control and the scanner (MFP control detection) Communication establishment error/ framing/ parity/ protocol error Follows the communication protocol specifications. Communication error, timing abnormality of the communication data and the communication signal line
			Section	Controller
			Operation mode	
			Note	

Main code	Sub code	Title	**Communication trouble between the MFP control and the scanner (MFP control detection)**	
E7	**80**	Case 1	Trouble position/ Cause	Defective connection of the slave unit PWB connector Defective harness between the slave unit PWB and the MFP control PWB Slave unit PWB mother board connector pin breakage
			Remedy	Check connection of the connector between the slave unit PWB and the MFP control PWB and the harness. Check grounding of the machine.
			Note	

Main code	Sub code	Title	**MFP control-PCU communication trouble (MFP control detection)**	
E7	**90**	Phenomenon	Display	Lamp
				Message
			Details	MFP control-PCU communication trouble (MFP control detection) Communication establishment error/ framing/ parity/ protocol error Follows the communication protocol specifications. Communication error, timing abnormality of the communication data and the communication signal line
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Defective connection of the slave unit PWB connector Defective harness between the slave unit PWB and the MFP control PWB Slave unit PWB mother board connector pin breakage
			Remedy	Check connection of the connector between the slave unit PWB and the MFP control PWB and the harness. Check grounding of the machine.
			Note	

Main code	Sub code	Title	**Auto developer adjustment trouble (Overtoner error)**	
EE	**EL**	Phenomenon	Display	Lamp
				Message
			Details	Auto developer adjustment trouble (Overtoner error) When executing the automatic development adjustment, toner concentration sensor output level is 1.5V or below.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Toner density sensor trouble Charging voltage and developing voltage trouble Toner density trouble Developing unit trouble PCU PWB trouble
			Remedy	Use SIM 25-2 to perform the automatic developing adjustment.
			Note	

Main code	Sub code	Title	**Auto developer adjustment trouble (Undertoner error)**	
EE	**EU**	Phenomenon	Display	Lamp
				Message
			Details	Auto developer adjustment trouble (Undertoner error) When executing the automatic development adjustment, toner concentration sensor output level is 3.5V or above.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Toner density sensor trouble Charging voltage and developing voltage trouble Toner density trouble Developing unit trouble PCU PWB trouble
			Remedy	Use SIM 25-2 to perform the automatic developing adjustment.
			Note	

Main code	Sub code	Title	Finisher communication trouble	
F1	00	Phenomenon	Display	Lamp
				Message
			Details	Finisher communication trouble An error in the communication line test after turning on the power or canceling the simulation Communication error with the finisher Follows the communication protocol specifications. Communication error, timing abnormality of the communication data and the communication signal line
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection or disconnection of the connector or harness between the machine and the finisher
			Remedy	Check the connector and the harness in the communication line.
			Note	
		Case 2	Trouble position/ Cause	Finisher control PWB trouble Control PWB (PCU) trouble
			Remedy	Replace the finisher control PWB or the PCU PWB.
			Note	
		Case 3	Trouble position/ Cause	Malfunction caused by noises
			Remedy	Canceled by turning ON/ OFF the power.
			Note	

Main code	Sub code	Title	Finisher transport motor abnormality	
F1	02	Phenomenon	Display	Lamp
				Message
			Details	Finisher transport motor abnormality When opening the shutter unit, the opening process is not completed in 1sec. When closing the shutter unit, the closing process is not completed in 1sec. When the tray lift unit is operating in the dangerous area, "Not closed state" of the shutter close sensor is detected.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
			Remedy	Use SIM 3-3 to check the transport motor operation.
			Note	

Main code	Sub code	Title	Finisher oscillation motor trouble	
F1	03	Phenomenon	Display	Lamp
				Message
			Details	Finisher oscillation motor trouble When opening the oscillation unit, the opening process is not completed in 1sec. When closing the oscillation unit, the closing operation is not completed in 3sec. When the tray lift unit is operating in the dangerous area, "Not closed state" of the oscillation unit close sensor is detected. When controlling the oscillation unit speed, the encoder input cannot be detected within a specified time.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
			Remedy	Use SIM 3-3 to check the motor operation.
			Note	

Main code	Sub code	Title	Finisher staple shift motor trouble	
F1	**08**	Phenomenon	Display	Lamp
				Message
			Details	Finisher staple shift motor trouble When the stapler shift motor does not move from the hope position in 4sec when operating the stapler shift motor. When the stapler shift motor does not return to the home position in 4sec when operating the stapler shift motor.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
			Remedy	Use SIM 3-3 to check the staple shift motor operation.
			Note	

Main code	Sub code	Title	Finisher load capacity sensor trouble	
F1	**09**	Phenomenon	Display	Lamp
				Message
			Details	Finisher load capacity sensor trouble When the received data on performing the sensor test at turning on the power are outside the specified range. When the detected data on calculation of the correction value are outside the specified range.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Sensor breakage Harness disconnection Console finisher control PWB trouble
			Remedy	Use SIM 3-2 to check the sensor operation.
			Note	

Main code	Sub code	Title	Finisher/staple motor trouble	
F1	**10**	Phenomenon	Display	Lamp
				Message
			Details	Finisher/staple motor trouble When the staple unit does not shift from HP within 0.5sec in staple process. When a stapler jam is detected and the staple motor is reversed, the staple motor does not return to HP in 0.5sec.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
			Remedy	Use SIM 3-3 to check the staple shift motor operation.
			Note	

Main code	Sub code	Title	Finisher/pusher motor trouble	
F1	**11**	Phenomenon	Display	Lamp
				Message
			Details	Finisher/pusher motor trouble When learning the paper exit roller speed, the process is not completed in 10sec. When controlling the paper exit roller speed, an encoder input is not detected in a specified time.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
			Remedy	Use SIM 3-3 to check the pusher motor operation and the paddle solenoid operation, or use SIM 3-2 to check the boomerang rotations sensor.
			Note	

Main code	Sub code	Title	Finisher tray lift motor trouble	
F1	15	Phenomenon	Display	Lamp
				Message
			Details	Finisher tray lift motor trouble When operating the tray lift unit, the process is not completed in 12sec. When the tray lift unit is lifting, the tray lift unit upper limit sensor ON is detected. When operating the tray lift unit, en encoder input is not detected in 0.2sec.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
			Remedy	Use SIM 3-3 to check the elevator motor operation.
			Note	

Main code	Sub code	Title	Finisher/alignment motor trouble	
F1	19	Phenomenon	Display	Lamp
				Message
			Details	Finisher/alignment motor trouble When operating the alignment motor, it does not move from the home position in 2sec. When operating the alignment motor, it does not return to the home position in 2sec.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
			Remedy	Use SIM 3-3 to check the motor operation.
			Note	

Main code	Sub code	Title	Finisher saddle folding sensor trouble	
F1	31	Phenomenon	Display	Lamp
				Message
			Details	Finisher saddle folding sensor trouble When the motor rotation speed (linear velocity) at every 200msec falls below the specified level. When moving to the home position, the home position sensor does not turn on within the specified time. When shifting from the home position to the lead edge, the home position sensor does not turn off within the specified time.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Sensor breakage Harness disconnection Console finisher control PWB trouble
			Remedy	Use SIM 3-2 to check the sensor operation.
			Note	

Main code	Sub code	Title	Finisher-saddle communication trouble	
F1	32	Phenomenon	Display	Lamp
				Message
			Details	Communication error between the finisher and the saddle When the motor rotation speed (linear velocity) at every 200msec falls below the specified level. When moving to the home position, the home position sensor does not turn on within the specified time. When shifting from the home position to the lead edge, the home position sensor does not turn off within the specified time.
			Section	Finisher
			Operation mode	
			Note	

Main code	Sub code	Title	**Finisher-saddle communication trouble**	
F1	**32**	Case 1	Trouble position/ Cause	Improper connection or disconnection of the connector and the harness between the finisher and the saddle unit.
			Remedy	Check the connector and the harness in the communication line.
			Note	
		Case 2	Trouble position/ Cause	Finisher control PWB trouble Control PWB (PCU) trouble
			Remedy	Replace the finisher control PWB.
			Note	
		Case 3	Trouble position/ Cause	Malfunction caused by noises
			Remedy	Canceled by turning ON/ OFF the power.
			Note	

Main code	Sub code	Title	**Finisher/punch shift motor trouble**	
F1	**33**	Phenomenon	Display	Lamp
				Message
			Details	Finisher/punch shift motor trouble When operating the punch shift motor, it does not move from the home position in 4sec. When operating the punch shift motor, it does not return to the home position in 4sec.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
			Remedy	Use SIM 3-3 to check the motor operation.
			Note	

Main code	Sub code	Title	**Finisher/punch motor trouble**	
F1	**34**	Phenomenon	Display	Lamp
				Message
			Details	Finisher/punch motor trouble When learning the punch unit, it does not complete normally and does not return to the home position. When executing punching, it does not shift from the home position in 0.2sec, or it overruns to go into non-HP state. When operating the punch unit, the encoder input cannot be detected within 0.1sec.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
			Remedy	Use SIM 3-3 to check the motor operation.
			Note	

Main code	Sub code	Title	**Finisher/ backup RAM trouble**	
F1	**37**	Phenomenon	Display	Lamp
				Message
			Details	Finisher/ backup RAM trouble When backup RAM data check sum is NG when turning on the power.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Finisher control PWB trouble Malfunction caused by noises
			Remedy	Replace the finisher control PWB.
			Note	

Main code	Sub code	Title	**Finisher/punch backup ROM trouble**	
F1	**38**	Phenomenon	Display	Lamp
				Message
			Details	Finisher/punch backup ROM trouble Punch unit backup RAM data are garbled.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Punch control PWB trouble Malfunction caused by noises
			Remedy	Replace the punch control PWB.
			Note	

Main code	Sub code	Title	**Finisher/saddle positioning plate motor trouble**	
F1	**41**	Phenomenon	Display	Lamp
				Message
			Details	Finisher/saddle positioning plate motor trouble The positioning motor HP sensor does not turn on within 1.33sec after starting the motor. The positioning motor HP sensor does not turn off within 1sec after starting the motor.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Finisher control PWB trouble Malfunction caused by noises
			Remedy	Replace the finisher control PWB.
			Note	

Main code	Sub code	Title	**Finisher/saddle guide motor trouble**	
F1	**42**	Phenomenon	Display	Lamp
				Message
			Details	Finisher/saddle guide motor trouble It does not return to the home position within the specified time from starting the guide motor. The HP sensor does not turn off within the specified time when shifting from the home position to the specified position.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Finisher control PWB trouble Malfunction caused by noises
			Remedy	Replace the finisher control PWB.
			Note	

Main code	Sub code	Title	**Finisher/saddle alignment motor trouble**	
F1	**43**	Phenomenon	Display	Lamp
				Message
			Details	Finisher/saddle alignment motor trouble When shifting to the home position, the home position sensor does not turn on. The HP sensor does not turn off within the specified time when shifting from the home position to the specified position.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Finisher control PWB trouble Malfunction caused by noises
			Remedy	Replace the finisher control PWB.
			Note	

Main code	Sub code	Title	**Finisher/saddle bottom staple motor trouble**	
F1	**44**	Phenomenon	Display	Lamp
				Message
			Details	Finisher/saddle bottom staple motor trouble The home position sensor does not turn off within the specified time after normal starting of the motor. The home positions sensor does not turn on within the specified time after reverse starting of the motor in recovery.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Finisher control PWB trouble Malfunction caused by noises
			Remedy	Replace the finisher control PWB.
			Note	

Main code	Sub code	Title	**Finisher/saddle front staple motor trouble**	
F1	**45**	Phenomenon	Display	Lamp
				Message
			Details	Finisher/saddle front staple motor trouble The home position sensor does not turn off within the specified time after normal starting of the motor. The home positions sensor does not turn on within the specified time after reverse starting of the motor in recovery.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Finisher control PWB trouble Malfunction caused by noises
			Remedy	Replace the finisher control PWB.
			Note	

Main code	Sub code	Title	**Finisher/saddle push motor trouble**	
F1	**46**	Phenomenon	Display	Lamp
				Message
			Details	Finisher/saddle push motor trouble When moving to the home position, the home position sensor does not turn on within the specified time. The push lead edge sensor does not turn on within the specified time after shifting from the home position. When shifting from the home position to the lead edge, the home position sensor does not turn off within the specified time. The lead edge sensor does not turn off within the specified time when shifting from the lead edge position to the home position. The motor RPM at every 50msec falls below the specified level. The lead edge sensor does not turn on within the specified time when shifting from the home position to the lead edge position.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Finisher control PWB trouble Malfunction caused by noises
			Remedy	Replace the finisher control PWB.
			Note	

Main code	Sub code	Title	**Finisher/saddle sensor connector connection trouble**	
F1	51	Phenomenon	Display	Lamp
				Message
			Details	Finisher/saddle sensor connector connection trouble The connector connection detection input of the guide HP sensor is off. The connector connection detection input of the push lead edge sensor is off.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Finisher control PWB trouble Malfunction caused by noises
			Remedy	Replace the finisher control PWB.
			Note	

Main code	Sub code	Title	**Finisher/micro switch trouble**	
F1	52	Phenomenon	Display	Lamp
				Message
			Details	Finisher/micro switch trouble With all cover PI (photo sensor) ON, the transport cover MS is off fort 1sec continuously from starting copying. With all cover PI (photo sensor) ON, the front cover MS is off fort 1sec continuously from starting copying. With all cover PI (photo sensor) ON, the paper exit cover MS is off fort 1sec continuously from starting copying.
			Section	Finisher
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Finisher control PWB trouble Malfunction caused by noises
			Remedy	Replace the finisher control PWB.
			Note	

Main code	Sub code	Title	**Finisher-inserter communication trouble**	
F1	60	Phenomenon	Display	Lamp
				Message
			Details	Finisher/inserter communication trouble
			Section	Inserter
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection or disconnection of the connector and the harness between the finisher and the inserter unit
			Remedy	Check the connector and the harness in the communication line.
			Note	
		Case 2	Trouble position/ Cause	Finisher control PWB trouble Control PWB (PCU) trouble
			Remedy	Replace the finisher control PWB.
			Note	
		Case 3	Trouble position/ Cause	Malfunction caused by noises
			Remedy	Canceled by turning ON/ OFF the power.
			Note	

Main code	Sub code	Title	**Inserter/EEPROM trouble**	
F1	61	Phenomenon	Display	Lamp
				Message
			Details	Inserter/EEPROM trouble Data read failure on turning on the power
			Section	Inserter
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	EEPROM trouble Control circuit runaway due to noises
			Remedy	Check that the EEPROM is properly installed. Replace the inserter PWB.
			Note	
		Case 2	Trouble position/ Cause	Inserter PWB EEPROM access circuit trouble
			Remedy	Replace the inserter PWB.
			Note	

Main code	Sub code	Title	**Inserter/reverse sensor trouble**	
F1	**62**	Phenomenon	Display	Lamp
				Message
			Details	Inserter/reverse sensor trouble Auto adjustment failure on turning on the power
			Section	Inserter
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Auto adjustment failure on turning on the power Sensor breakage Harness disconnection Inserter PWB trouble
			Remedy	Use SIM 3-2 to check the sensor operation.
			Note	

Main code	Sub code	Title	**Toner control sensor open**	
F2	**00**	Phenomenon	Display	Lamp
				Message
			Details	Toner control sensor output open After completion of auto development adjustment, during process operation, the toner sensor output is detected as 0.5V or less or 4.5V or above three times.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Connector harness trouble Connector not connected.
			Remedy	Check connection of the toner control sensor. Check connection of the connector harness to the main PWB. Check for disconnection of the harness.
			Note	

Main code	Sub code	Title	**Toner supply abnormality**	
F2	**02**	Phenomenon	Display	Lamp
				Message
			Details	Toner supply abnormality Toner remains in the toner bottle when undertoner is detected by the toner concentration sensor in the developing unit.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Toner concentration sensor trouble Toner remaining quantity sensor trouble Connector harness trouble for the above sensors.
			Remedy	Check connector of hopper unit toner motor (TM1) Check connector of toner bottle toner motor (TM2) Check connection of the connector harnesses to the main PWB. Check broken harness for above connections. Check output of the toner concentration sensor (SIM25-1) Check output of the toner remaining quantity sensor (SIM10-2)
			Note	

Main code	Sub code	Title	**Improper cartridge (Life cycle error, ertc.)**	
F2	**04**	Phenomenon	Display	Lamp
				Message
			Details	An improper toner bottle is inserted. CRUM (IC chip trouble)
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	IC chip trouble Improper cartridge
			Remedy	Insert a proper cartridge.
			Note	

Main code	Sub code	Title	CRUM error	
F2	05	Phenomenon	Display	Lamp
				Message
			Details	Communication with the IC chip cannot be made. Data write failure to the CRUM or data read failure from the CRUM occurs 3 times continuously except for toner cartridge installation detection.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	IC chip trouble Improper cartridge
			Remedy	Insert a proper cartridge.
			Note	

Main code	Sub code	Title	Process control trouble (Photoconductor surface reflection rate abnormality)	
F2	31	Phenomenon	Display	Lamp
				Message
			Details	Process control trouble (Photoconductor surface reflection rate abnormality) Before starting process control, the drum surface is read by the image density sensor to make the sensor gain adjustment so that the output is fixed to a certain level. Though the sensor gain is changed, the output is not fixed to a certain level.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Image density sensor trouble
			Remedy	Use SIM 44-02 to perform the process control sensor gain adjustment.
			Note	
		Case 2	Trouble position/ Cause	Improper connection of the harness between the PCU PWB and the image density sensor
			Remedy	If "Error" is displayed, it may be considered as a breakdown. Check the sensor and the harness.
			Note	
		Case 3	Trouble position/ Cause	The image density sensor is dirty. OPC drum cleaning trouble
			Remedy	If the adjustment is completed, check the drum surface conditions.
			Note	

Main code	Sub code	Title	Process control trouble (Drum marking scan trouble)	
F2	32	Phenomenon	Display	Lamp
				Message
			Details	Process control trouble (Drum marking scan trouble) The drum marking size, density, or the number of units is improper.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Drum marking sensor trouble
			Remedy	Use SIM 44-02 to perform the process control sensor gain adjustment.
			Note	
		Case 2	Trouble position/ Cause	Improper connection of the harness between the PCU PWB and the drum marking sensor
			Remedy	If "Error" is displayed, it may be considered as a breakdown. Check the sensor and the harness.
			Note	
		Case 3	Trouble position/ Cause	The drum marking sensor is dirty. OPC drum cleaning trouble
			Remedy	If the adjustment is completed, check the drum surface conditions.
			Note	

Main code	Sub code	Title	Drum marking sensor gain adjustment error	
F2	37	Phenomenon	Display	Lamp
				Message
			Details	Drum marking sensor gain adjustment error Before starting process control, the drum marking area surface is read by the sensor to make the sensor gain adjustment so that the output is fixed to a certain level. Though the sensor gain is changed, the output is not fixed to a certain level.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Drum marking sensor trouble
			Remedy	Use SIM 44-02 to perform the process control sensor gain adjustment.
			Note	

⚠: Feb. 9 2004

Main code	Sub code	Title	Drum marking sensor gain adjustment error	
F2	37	Case 2	Trouble position/ Cause	Improper connection of the harness between the PCU PWB and the drum marking sensor
			Remedy	If "Error" is displayed, it may be considered as a breakdown. Check the sensor and the harness.
			Note	
		Case 3	Trouble position/ Cause	The drum marking sensor is dirty. OPC drum cleaning trouble
			Remedy	If the adjustment is completed, check the drum surface conditions.
			Note	

Main code	Sub code	Title	Process thermistor breakdown	
F2	39	Phenomenon	Display	Lamp
				Message
			Details	Process thermistor breakdown When the process thermistor detection, 3.03V or above, or 0.28V or below is detected once.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection of the process thermistor harness.
			Remedy	Check connection of the connector and the harness of the process thermistor.
			Note	
		Case 2	Trouble position/ Cause	Process thermistor trouble
			Remedy	Replace the process thermistor.
			Note	
		Case 3	Trouble position/ Cause	PCU PWB trouble
			Remedy	Check the PCU PWB.
			Note	

Main code	Sub code	Title	Developing thermistor breakdown	
F2	46	Phenomenon	Display	Lamp
				Message
			Details	Developing thermistor open or short. Three successive values of 244 or above, or values of 20 or below, are detected at the developing thermistor.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Developing thermistor harness connection trouble
			Remedy	Check connection of the connector and the harness of the developing thermistor.
			Note	
		Case 2	Trouble position/ Cause	Developing thermistor trouble
			Remedy	Check the developing thermistor
			Note	
		Case 3	Trouble position/ Cause	PCU PWB trouble
			Remedy	Check the PCU PWB.
			Note	

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Main code	Sub code	Title	Developing humidity sensor break down	
F2	48	Phenomenon	Display	Lamp
				Message
			Details	Developing humidity sensor open or short. A value of greater than or equal to 255 or above, or value of 7 or below, is detected at the developing humidity sensor.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Developing humidity sensor harness connection trouble
			Remedy	Check connection of the connector and the harness of the developing humidity sensor.
			Note	
		Case 2	Trouble position/ Cause	Developing humidity sensor trouble
			Remedy	Check the developing humidity sensor
			Note	
		Case 3	Trouble position/ Cause	PCU PWB trouble
			Remedy	Check the PCU PWB.
			Note	

Main code	Sub code	Title	Machine tray 1 lift-up trouble	
F3	12	Phenomenon	Display	Lamp
				Message
			Details	Machine tray 1 lift-up trouble PED does not turn on within the specified time. LUD does not turn on within the specified time. The trouble occurs 3 times continuously that the upper limit sensor does not turn on by lift-up operation for 21sec when inserting a tray or for 2sec when printing. For the first and the second times, guide the user to pull out the tray in case of a tray size error.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	PED, LUD trouble No. 1 tray lift-up motor trouble Improper connection of the harness of the PCU PWB, the lift-up unit, and the paper feed unit
			Remedy	Check the harness and connector of PED and LUD Lift-up trouble unit check. Use SIM 15 to cancel the trouble.
			Note	

Main code	Sub code	Title	Machine tray 2 lift-up trouble	
F3	22	Phenomenon	Display	Lamp
				Message
			Details	Machine tray 2 lift-up trouble MCPED does not turn on within the specified time. MCLUD does not turn on within the specified time. The trouble occurs 3 times continuously that the upper limit sensor does not turn on by lift-up operation for 10sec when inserting a tray or for 2sec when printing. For the first and the second times, guide the user to pull out the tray in case of a tray size error.
			Section	Engine
			Operation mode	
			Note	

Main code	Sub code	Title	Machine tray 2 lift-up trouble	
F3	22	Case 1	Trouble position/ Cause	MCPED, MCLUD trouble No. 2 tray lift-up motor trouble Improper connection of the harness of the PCU PWB, the lift-up unit, and the paper feed unit
			Remedy	Check the harness and the connector of MCPED and MCLUD. Lift-up trouble unit check. Use SIM 15 to cancel the trouble.
			Note	

Main code	Sub code	Title	Machine tray 3 lift-up trouble	
F3	32	Phenomenon	Display	Lamp
				Message
			Details	Machine tray 3 lift-up trouble MCPED does not turn on within the specified time. MCLUD does not turn on within the specified time. The trouble occurs 3 times continuously that the upper limit sensor does not turn on by lift-up operation for 10sec when inserting a tray or for 2sec when printing. For the first and the second times, guide the user to pull out the tray in case of a tray size error.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	MCPED, MCLUD trouble No. 3 tray lift-up motor trouble Improper connection of the harness of the PCU PWB, the lift-up unit, and the paper feed unit
			Remedy	Check the harness and the connector of MCPED and MCLUD. Lift-up trouble unit check
			Note	

Main code	Sub code	Title	**Machine tray 4 lift-up trouble**	
F3	**42**	Phenomenon	Display	Lamp
				Message
			Details	Machine tray 4 lift-up trouble MCPED does not turn on within the specified time. MCLUD does not turn on within the specified time. The trouble occurs 3 times continuously that the upper limit sensor does not turn on by lift-up operation for 10sec when inserting a tray or for 2sec when printing. For the first and the second times, guide the user to pull out the tray in case of a tray size error.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	MCPED, MCLUD trouble No. 4 tray lift-up motor trouble Improper connection of the harness of the PCU PWB, the lift-up unit, and the paper feed unit
			Remedy	Check the harness and the connector of MCPED and MCLUD. Lift-up trouble unit check
			Note	

Main code	Sub code	Title	**38V voltage trouble**	
F4	**38**	Phenomenon	Display	Lamp
				Message
			Details	38V voltage falls or rises.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection or disconnection of the connector and the harness
			Remedy	Check the connector and the harness of the power line.
			Note	
		Case 2	Trouble position/ Cause	PCU PWB trouble Power unit trouble
			Remedy	Check 38V power source in the power unit and the PCU PWB.
			Note	

Main code	Sub code	Title	**MFP control-FAX communication trouble (MFP control detection)**	
F6	**00**	Phenomenon	Display	Lamp
				Message
			Details	MFP control-FAX communication trouble (MFP control detection) The booting sequence by the command line (9600bps, serial) is not completed normally. Communication establishment error/ framing/ parity/ protocol error
			Section	FAX
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Defective connection of the slave unit PWB connector Defective harness between the slave unit PWB and the MFP control PWB Slave unit PWB mother board connector pin breakage
			Remedy	Use SIM 25-2 to perform the automatic developing adjustment. Check connection of the connector between the slave unit PWB and the MFP control PWB and the harness.
			Note	Check grounding of the machine.
		Case 2	Trouble position/ Cause	Slave unit ROM trouble/ no ROM/ Reversed insertion of ROM/ ROM pin breakage
			Remedy	Check the ROM on the slave unit PWB.
			Note	

Main code	Sub code	Title	FAX expansion Flash memory trouble (MFP control detection)	
F6	01	Phenomenon	Display	Lamp
				Message
			Details	FAX expansion Flash memory trouble (MFP control detection) The expansion flash memory inserted to the FAX I/F PWB could not be cleared.
			Section	FAX
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Initialization of the FAX expansion memory failed, which is required for a new memory that is inserted to the PWB.
			Remedy	Use SIM 66-10 to clear the expansion flash memory.
			Note	

Main code	Sub code	Title	FAX modem operation abnormality	
F6	04	Phenomenon	Display	Lamp
				Message
			Details	FAX modem operation abnormality The initializing process of the modem chip in the FAX PWB is not completed normally.
			Section	FAX
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	SW101 in the FAX PWB tries to perform normal operation on the boot side.
			Remedy	Set SW101 on the FAX PWB to other than the boot side, and turn on the power again.
			Note	
		Case 2	Trouble position/ Cause	FAX PWB modem chip operation trouble
			Remedy	Replace the FAX PWB.
			Note	

Main code	Sub code	Title	FAX write protect cancel	
F6	20	Phenomenon	Display	Lamp
				Message
			Details	The write protect jumper of the FAX interface PWB is released.
			Section	FAX
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	The FAX write protect pin is set to Write Enable.
			Remedy	Check the write protect pin in the FAX interface PWB.
			Note	
		Case 2	Trouble position/ Cause	FAX interface PWB trouble FAX PWB trouble
			Remedy	Replace the FAX PWB. Replace the FAX interface PWB.
			Note	

Main code	Sub code	Title	Abnormal combination of the TEL/ LIU PWB and the FAX soft switch	
F6	21	Phenomenon	Display	Lamp
				Message
			Details	Combination error of TEL/ LIU PWB and software If the destination of the installed TEL/LIU PWB differs from that of the FAX soft switch, it is judged as an error.
			Section	FAX
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	The destination of the installed TEL/LIU PWB differs. The FAX PWB information (soft switch) differs.
			Remedy	Check the destination of the TEL/LIU PWB. Check the FAX PWB information (soft switch).
			Note	
		Case 2	Trouble position/ Cause	TEL/LIU PWB trouble
			Remedy	Replace the TEL/LIU PWB.
			Note	

Main code	Sub code	Title	FAX-BOX incompatibility trouble	
F6	97	Phenomenon	Display	Lamp
				Message
			Details	The FAX-BOX PWB is not one for the AR-FX8. (FAX detection) If the FAX-BOX modem controller PWB information (hard detection) is not for the AR-FX8, it is judged as an error.
			Section	FAX
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Because the FAX-BOX modem controller PWB information (hard detection) is not for the AR-FX8. (The modem controller PWB for the AR-FX5 or the AR-FX6 is used.)
			Remedy	Check the FAX-BOX modem controller PWB. Replace it with a modem controller PWB for the AR-FX8.
			Note	

Main code	Sub code	Title	Combination error of the FAX-BOX destination information and the machine destination information	
F6	98	Phenomenon	Display	Lamp
				Message
			Details	Combination error of the FAX-BOX destination information and the machine destination information When the destination information stored in the FAX-BOX EEPROM is compared with that of the machine, and if the combination is improper, it is judged as an error.
			Section	FAX
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Because of improper combination between the destination information stored in the EEPROM on the FAX-BOX PWB and that of the machine (set with SIM 26-6).
			Remedy	Check the destination of the FAX-BOX. Check the machine destination with SIM 26-6. Use a proper combination of the machine and the FAX-BOX.
			Note	

Main code	Sub code	Title	FAX board EEPROM read/write error	
F7	01	Phenomenon	Display	Lamp
				Message
			Details	FAX board EEPROM read/write error ACK from the EEPROM cannot be checked.
			Section	FAX
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	EEPROM trouble FAX PWB EEPROM access circuit trouble
			Remedy	Replace the EEPROM. Re-setup the soft SW.
			Note	

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Main code	Sub code	Title	PRT centro port check error	
F9	02	Phenomenon	Display	Lamp
				Message
			Details	PRT centro port check error
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Centro port trouble MFP controll PWB trouble
			Remedy	Replace the MFP controll PWB.
			Note	

Main code	Sub code	Title	Thermistor open/Fusing unit not installed	
H2	00/ HL1 01/ HL2 02/ HL3	Phenomenon	Display	Lamp
				Message
			Details	Thermistor open (An input voltage of 2.95V or above is detected.) Fusing unit not installed
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Thermistor trouble Control PWB trouble Improper connection of the fusing section connector AC power trouble Fusing unit not installed
			Remedy	Check the harness and the connector between the thermistor and the control PWB. Use SIM 14 to clear the self diag display.
			Note	

Main code	Sub code	Title	Fusing section high temperature trouble	
H3	00/ HL1 01/ HL2 02/ HL3	Phenomenon	Display	Lamp
				Message
			Details	Fusing section high temperature trouble The fusing temperature exceeds 241.5°C. (An input voltage of 0.35V or less is detected.) When fusing temperature control is started and a temperature of 242°C is detected 3 times continuously in sampling of 300 (450) msec interval. (Except for Japan)
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Thermistor trouble Control PWB trouble Improper connection of the fusing section connector AC power trouble
			Remedy	Use SIM 5-2 to check flashing of the heater lamp. When the lamp flashes normally. • Check the thermistor and the harness. • Check the thermistor input circuit on the control PWB. When the lamp keeps ON. • Check the AC PWB and the lamp control circuit on the control PWB. Use SIM 14 to cancel the trouble
			Note	

Main code	Sub code	Title	Fusing section low temperature trouble	
H4	00/ HL1 01/ HL2 02/ HL3	Phenomenon	Display	Lamp
				Message
			Details	Fusing section low temperature trouble The set temperature is not reached within the specified time (normally 4 min) after turning on the power relay. The heater lamp does not turn off in 4 min after starting warming up. After completion of warming up, when the temperature below (*) is detected 5 times continuously during sampling in the interval of 300(450) msec (EX JAPAN): * H4-02/HL3: 80°C (Fixed level) This temperature is -50°C lower than the temperature control level of H4-00/HL1, H4-01/ HL2.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Thermistor trouble Heater lamp trouble Control PWB trouble Thermostat trouble AC power trouble Interlock switch
			Remedy	Use SIM 5-2 to check flashing of the heater lamp. When the lamp flashes normally. • Check the thermistor and the harness. • Check the thermistor input circuit on the control PWB. When the lamp does not turn on. • Check for disconnection of the heater lamp or the thermostat. • Check the interlock switch. • Check the AC PWB and the lamp control circuit on the control PWB. Use SIM 14 to cancel the trouble
			Note	

Main code	Sub code	Title	**5-time continuous POD not-reached JAM detection**	
H5	01	Phenomenon	Display	Lamp
				Message
			Details	5-time continuous POD not-reached JAM detection When POD1 not-reached jam is detected 5 times continuously. POD1 jam counter is backed up and used in a print job after turning on the power. The counter is cleared when POD1 jam does not occur in a job or when the trouble is canceled.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	The fusing jam is not canceled completely. (Jam paper remains.)
			Remedy	Check for jam paper in the fusing section. (Winding, etc.)
		Case 2	Trouble position/ Cause	POD1 sensor trouble, or harness connection trouble
			Remedy	Check the PODC1 sensor harness and installation of the fusing unit.
		Case 3	Trouble position/ Cause	Fusing unit installation trouble
			Remedy	Use SIM 14 to cancel the trouble

Main code	Sub code	Title	**Scanner feed trouble**	
L1	00	Phenomenon	Display	Lamp
				Message
			Details	Scanner feed trouble Scanner feed is not completed within the specified time. When MHP Soft is not detected within 2 sec after shifting the mirror base unit in the feeding direction.
			Section	Scanner
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Scanner unit trouble The scanner wire is disconnected.
			Remedy	Use SIM 1-1 to check scanning operation.
			Note	

Main code	Sub code	Title	**Scanner return trouble**	
L3	00	Phenomenon	Display	Lamp
				Message
			Details	Scanner return trouble Scanner return is not completed within the specified time. MHPSon is not detected within 10sec after starting the mirror base unit in the return direction.
			Section	Scanner
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Scanner unit trouble The scanner wire is disconnected.
			Remedy	Use SIM 1-1 to check scanning operation.
			Note	

Main code	Sub code	Title	**Main motor lock detection**	
L4	01	Phenomenon	Display	Lamp
				Message
			Details	Main motor lock detection Three successive trouble signals are detected after 600 msec from starting the main motor. No trouble is detected after 600msec above.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Main motor trouble
			Remedy	Use SIM 6-1 to check the main motor operation.
			Note	
		Case 2	Trouble position/ Cause	Improper disconnection of the harness between the PCU PWB and the main motor Control circuit trouble
			Remedy	Check the harness and the connector between the PCU PWB and the main motor.
			Note	

Main code	Sub code	Title	Drum motor lock detection	
L4	02	Phenomenon	Display	Lamp
				Message
			Details	Drum motor lock detection The motor lock signal is detected for 1.5sec during rotation of the drum motor.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Drum motor trouble
			Remedy	Use SIM 6-1 to check the drum motor operation.
			Note	
		Case 2	Trouble position/ Cause	Improper connection of the harness between the PCU PWB and the drum motor Control circuit trouble
			Remedy	Check the harness and the connector of the PCU PWB, and the drum motor.
			Note	

Main code	Sub code	Title	Fusing motor lock detection	
L4	03	Phenomenon	Display	Lamp
				Message
			Details	Fusing motor lock detection Three successive trouble signals are detected after 600 msec from starting the fusing motor.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Fusing motor trouble
			Remedy	Use SIM 6-1 to check the fusing motor operation.
			Note	
		Case 2	Trouble position/ Cause	Improper connection of the harness between the PCU PWB and the fusing motor Control circuit trouble
			Remedy	Check connection of the harness and the connector between the PCU PWB and the fusing motor.
			Note	

Main code	Sub code	Title	Developing motor lock detection	
L4	04	Phenomenon	Display	Lamp
				Message
			Details	Developing motor lock detection The motor lock signal is detected for 1.5sec during rotation of the developing motor
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Developing motor trouble
			Remedy	Use SIM 6-1 to check the developing motor operation.
			Note	
		Case 2	Trouble position/ Cause	Improper connection of the harness between the PCU PWB and the developing motor Control circuit trouble
			Remedy	Check the harness and the connector between the PCU PWB and the developing motor.
			Note	

Main code	Sub code	Title	Transfer belt separation motor trouble detection	
L4	06	Phenomenon	Display	Lamp
				Message
			Details	Transfer belt separation motor trouble detection The transfer belt home position sensor ON/OFF is not detected within the specified time (4 sec) during operation of the transfer belt (separation, contact).
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Transfer belt separation motor trouble
			Remedy	Use SIM 6-1 to check the transfer belt motor operation.
			Note	
		Case 2	Trouble position/ Cause	Improper connection of the harness between the PCU PWB and the transfer belt separation motor. Control circuit trouble
			Remedy	Check connection of the harness and the connector between the PCU PWB and the fusing motor.
			Note	

Main code	Sub code	Title	**Controller fan motor lock detection**	
L4	**30**	Phenomenon	Display	Lamp
				Message
			Details	Controller fan motor lock detection The motor lock signal is detected during rotation of the controller fan motor. The motor lock signal is detected during rotation of the HDD fan motor.
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Fan motor trouble
			Remedy	Use SIM 6-2 to check the fan motor operation.
			Note	
		Case 2	Trouble position/ Cause	Improper connection of the harness between the controller PWB and the fan motor. Control circuit trouble
			Remedy	Check the harness and the connector between the controller PWB and the fan motor.
			Note	

Main code	Sub code	Title	**Paper discharging fan trouble**	
L4	**31**	Phenomenon	Display	Lamp
				Message
			Details	Paper exit thermistor open or short. When the temperature of 100°C or above (entered value 235) is detected in the paper exit thermistor 3 times or more continuously.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Defective contact of paper exit thermistor harness
			Remedy	Check connection of the paper exit thermistor harness and the connector.
			Note	
		Case 2	Trouble position/ Cause	Fan motor trouble
			Remedy	Use SIM 6-2 to check the fan motor operation.
			Note	
		Case 3	Trouble position/ Cause	PCU PWB, harness connection between fan and motor trouble PCU circuit trouble Thermistor (TH_EX) trouble
			Remedy	Check the PCU PWB, the harness between fan and motor, and the connector.
			Note	

Main code	Sub code	Title	**Polygon motor lock detection**	
L6	**10**	Phenomenon	Display	Lamp
				Message
			Details	Polygon motor lock detection It is judged that the polygon motor lock signal of the LSU is not outputted. The polygon motor lock signal is checked in an interval of 10sec after starting the polygon motor, and it is found that the polygon motor is not rotating normally.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Polygon motor trouble
			Remedy	Use SIM 61-1 to check the polygon motor operation.
			Note	
		Case 2	Trouble position/ Cause	Disconnection or breakage of the LSU connector or the harness in the LSU
			Remedy	Check connection of the harness and the connector. Replace the LSU.
			Note	

Main code	Sub code	Title	**No full wave signal**	
L8	**01**	Phenomenon	Display	Lamp
				Message
			Details	The full wave signal is not detected.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Disconnection or breakage of the PCU PWB connector or the harness in the power unit
			Remedy	Check connection of the harness and the connector.
			Note	
		Case 2	Trouble position/ Cause	PCU PWB trouble
			Remedy	Replace the PCU PWB.
			Note	
		Case 3	Trouble position/ Cause	12V power source trouble
			Remedy	Replace the power unit. Replace the controller connection mother board.
			Note	

Main code	Sub code	Title	**RIC copy inhibit command receive**	
PF	**00**	Phenomenon	Display	Lamp
				Message
			Details	The copy inhibit command is received from the RIC (host). (By PPC communication standards.)
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Judged by the host.
			Remedy	Notification to the host
			Note	

Main code	Sub code	Title	**FAX battery abnormality**	
U1	**01**	Phenomenon	Display	Lamp
				Message
			Details	FAX battery abnormality FAX backup SRAM battery voltage fall
			Section	FAX
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Battery life
			Remedy	Check that the battery voltage is about 2.5V or above.
			Note	
		Case 2	Trouble position/ Cause	Battery circuit trouble
			Remedy	Check the battery circuit.
			Note	

Main code	Sub code	Title	**RTC read error (combined use as FAX, on MFP control PWB)**	
U1	**02**	Phenomenon	Display	Lamp
				Message
			Details	RTC read error (combined use as FAX, on MFP control PWB) The read value from the RTC on the MFP control PWB is abnormal such as "EE"h.
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	RTC circuit trouble
			Remedy	Make the time setup again with the key operation and check that the time advances normally. Check the RTC circuit.
			Note	
		Case 2	Trouble position/ Cause	Battery voltage fall
			Remedy	Check that the battery voltage is about 2.5V or above.
			Note	
		Case 3	Trouble position/ Cause	Battery circuit trouble
			Remedy	Check the battery circuit.
			Note	

Main code	Sub code	Title	**EEPROM read/write error (MFP control)**	
U2	**00**	Phenomenon	Display	Lamp
				Message
			Details	EEPROM write error
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	EEPROM trouble
			Remedy	Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/ adjustment values, write down the counter/ adjustment values.
			Note	
		Case 2	Trouble position/ Cause	Insertion of EEPROM which is not initialized
			Remedy	Use SIM 16 to cancel the U2 trouble.
			Note	
		Case 3	Trouble position/ Cause	MFP control PWB EEPROM access circuit trouble
			Remedy	Replace the MFP control PWB.
			Note	

Main code	Sub code	Title	**Counter check sum error (MFP control)**	
U2	**11**	Phenomenon	Display	Lamp
				Message
			Details	Counter data area check sum error
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	EEPROM trouble
			Remedy	Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/ adjustment values, write down the counter/ adjustment values.
			Note	
		Case 2	Trouble position/ Cause	Control circuit runaway due to noises
			Remedy	Use SIM 16 to cancel the U2 trouble.
			Note	
		Case 3	Trouble position/ Cause	MFP control PWB EEPROM access circuit trouble
			Remedy	Replace the MFP control PWB.
			Note	

Main code	Sub code	Title	**Adjustment value check sum error (MFP control)**	
U2	**12**	Phenomenon	Display	Lamp
				Message
			Details	Adjustment value data area check sum error
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	EEPROM trouble
			Remedy	Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/ adjustment values, write down the counter/ adjustment values.
			Note	
		Case 2	Trouble position/ Cause	Control circuit runaway due to noises
			Remedy	Use SIM 16 to cancel the U2 trouble.
			Note	
		Case 3	Trouble position/ Cause	MFP control PWB EEPROM access circuit trouble
			Remedy	Replace the MFP control PWB.
			Note	

Main code	Sub code	Title	**SRAM memory check sum error (MFP control)**	
U2	**22**	Phenomenon	Display	Lamp
				Message
			Details	MFPC section SRAM memory check sum error SRAM check sum error when turning on the power. (If this error occurs, initialize the one-touch dial and the FAX soft switches.)
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	SRAM trouble
			Remedy	Initialize the communication management table registered in the SRAM and the FAX soft switch. Since the registered data are deleted, register the data again.
			Note	
		Case 2	Trouble position/ Cause	Control circuit runaway due to noises
			Remedy	Use SIM 16 to cancel the U2 trouble.
			Note	
		Case 3	Trouble position/ Cause	MFP control PWB EEPROM access circuit trouble
			Remedy	Replace the MFP control PWB.
			Note	

Main code	Sub code	Title	SRAM memory individual data check sum error	
U2	23	Phenomenon	Display	Lamp
				Message
			Details	Check sum error for every individual data in SRAM of the MFPC section when turning on the power (If this error occurs, initialize the data related to the check sum error. (Communication management table, sender's information, etc.)
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	SRAM trouble
			Remedy	Automatically initialize the data related to the check sum error by turning OFF/ ON the power. Since the registered data are deleted, register the data again.
			Note	
		Case 2	Trouble position/ Cause	Control circuit runaway due to noises
			Remedy	Use SIM 16 to cancel the U2 trouble.
			Note	
		Case 3	Trouble position/ Cause	MFP control PWB EEPROM access circuit trouble
			Remedy	Replace the MFP control PWB.
			Note	

Main code	Sub code	Title	HDD section individual data check sum error (MFP control)	
U2	50	Phenomenon	Display	Lamp
				Message
			Details	Check sum error for every individual data in HDD of the MFPC section when turning on the power (If this error occurs, initialize the data related to the check sum error. (One-touch, group, program, etc.)
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	HDD write/read error
			Remedy	Automatically initialize the data related to the check sum error by turning OFF/ ON the power. Since the registered data are deleted, register the data again.
			Note	
		Case 2	Trouble position/ Cause	Control circuit runaway due to noises
			Remedy	Use SIM 16 to cancel the U2 trouble.
			Note	
		Case 3	Trouble position/ Cause	MFP control PWB HDD access circuit trouble
			Remedy	Replace the HDD. Replace the MFP control PWB.
			Note	

Main code	Sub code	Title	EEPROM red/write error (Scanner)	
U2	80	Phenomenon	Display	Lamp
				Message
			Details	EEPROM red/write error (Scanner) EEPROM communication trouble (NACK detection) Retry 3 times
			Section	Scanner
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	EEPROM trouble
			Remedy	Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/ adjustment values, write down the counter/ adjustment values.
			Note	
		Case 2	Trouble position/ Cause	Insertion of EEPROM which is not initialized
			Remedy	Use SIM 16 to cancel the U2 trouble.
			Note	
		Case 3	Trouble position/ Cause	Scanner PWB EEPROM access circuit trouble
			Remedy	Replace the scanner PWB.
			Note	

Main code	Sub code	Title	Memory check sum error (Scanner)	
U2	81	Phenomenon	Display	Lamp
				Message
			Details	Memory check sum error (Scanner) When counter data sum error is detected.
			Section	Scanner
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	EEPROM trouble
			Remedy	Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/ adjustment values, write down the counter/ adjustment values.
			Note	
		Case 2	Trouble position/ Cause	Control circuit runaway due to noises
			Remedy	Use SIM 16 to cancel the U2 trouble.
			Note	
		Case 3	Trouble position/ Cause	Scanner PWB EEPROM access circuit trouble
			Remedy	Replace the scanner PWB.
			Note	

Main code	Sub code	Title	EEPROM read/write error (PCU)	
U2	90	Phenomenon	Display	Lamp
				Message
			Details	EEPROM read/write error (PCU) EEPROM communication trouble (NACK detection) Retry 3 times
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	EEPROM trouble
			Remedy	Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/ adjustment values, write down the counter/ adjustment values.
			Note	
		Case 2	Trouble position/ Cause	Insertion of EEPROM which is not initialized
			Remedy	Use SIM 16 to cancel the U2 trouble.
			Note	
		Case 3	Trouble position/ Cause	PCU PWB EEPROM access circuit trouble
			Remedy	Replace the PCU PWB.
			Note	

Main code	Sub code	Title	**Memory check sum error (PCU)**	
U2	**91**	Phenomenon	Display	Lamp
				Message
			Details	Memory check sum error (PCU) When POF data/counter data sum error is detected.
			Section	Engine
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	EEPROM trouble
			Remedy	Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/ adjustment values, write down the counter/ adjustment values.
			Note	
		Case 2	Trouble position/ Cause	Control circuit runaway due to noises
			Remedy	Use SIM 16 to cancel the U2 trouble.
			Note	
		Case 3	Trouble position/ Cause	PCU PWB EEPROM access circuit trouble
			Remedy	Replace the PCU PWB.
			Note	

Main code	Sub code	Title	**SPF tray lift-up trouble**	
U5	**30**	Phenomenon	Display	Lamp
				Message
			Details	SPF tray lift-up trouble Lift-up trouble is detected 5 times continuously.
			Section	Scanner
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	STUD/STLD trouble STUD does not turn on within the specified time. STLD does not turn off within the specified time.
			Remedy	Check the harness and the connector of the STUD and STLD. Lift-up trouble unit check
			Note	

Main code	Sub code	Title	**SPF tray lift-down trouble**	
U5	**31**	Phenomenon	Display	Lamp
				Message
			Details	SPF tray lift-down trouble STLD does not turn off within the specified time.
			Section	Scanner
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	STUD/STLD trouble STUD does not turn on within the specified time. STLD does not turn off within the specified time.
			Remedy	Check the harness and the connector of the STUD and STLD. Lift-up trouble unit check
			Note	

Main code	Sub code	Title	**LCC lift motor trouble**	
U6	**09**	Phenomenon	Display	Lamp
				Message
			Details	LCC lift motor trouble • The upper limit sensor does not turn on within 24 sec after the lift motor is on. • No rotation sensor signal is detected for 0.2 sec or longer while the lift motor is on. • The upper limit switch is on while the lift motor is on. When the trouble occurs 3 time continuously that the upper limit sensor does not turn on.
			Section	LCC
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Sensor trouble LCC control PWB trouble Gear breakage Lift motor trouble
			Remedy	Use SIM to check the sensor detection. Use SIM to check the lift motor operation. Use SIM 15 to cancel the trouble.
			Note	

Main code	Sub code	Title	**LCC communication trouble**	
U6	**20**	Phenomenon	Display	Lamp
				Message
			Details	Communication trouble with the LCC. Follows the communication protocol specifications. Communication error, timing abnormality of the communication data and the communication signal line
			Section	LCC
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection or disconnection of the connector and the harness Desk control PWB trouble Control PWB (PCU) trouble Malfunction caused by noises
			Remedy	Canceled by turning ON/ OFF the power. Check the connector and the harness in the communication line.
			Note	

Main code	Sub code	Title	**LCC transport motor trouble**	
U6	**21**	Phenomenon	Display	Lamp
				Message
			Details	LCC transport motor trouble The lock detection signal is detected continuously for 1sec after delay of 1sec from start of the motor.
			Section	LCC
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Desk control PWB trouble
			Remedy	Use SIM 4-3 to check the transport motor operation.
			Note	

Main code	Sub code	Title	**LCC 24V power abnormality addition**	
U6	**22**	Phenomenon	Display	Lamp
				Message
			Details	LCC 24V power abnormality addition 24V power is not supplied to the LCC. (the LCC 24V power is not detected for 1 sec or longer after 1 sec from power on)
			Section	LCC
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection or disconnection of the connector and the harness
			Remedy	Check the connector and the harness of the power line.
			Note	
		Case 2	Trouble position/ Cause	LCC control PWB trouble Power unit trouble
			Remedy	Check the 24V power with the power unit and the LCC control PWB.
			Note	

Main code	Sub code	Title	**RIC communication trouble**	
U7	**00**	Phenomenon	Display	Lamp
				Message
			Details	Communication error with RIC (By PPC communication standards) An error in the communication line test after turning on the power or canceling the simulation
			Section	Controller
			Operation mode	
			Note	
		Case 1	Trouble position/ Cause	Improper connection or disconnection of the connector and the harness RIC control PWB trouble Control PWB (MFP control) trouble Malfunction caused by noises
			Remedy	Canceled by turning ON/ OFF the power. Check the connector and the harness in the communication line.
			Note	

[10] ROM VERSION-UP METHOD

1. General

A. Version-up target ROM's

The version-up target ROM's are listed in the table below.

The version-up procedures of the firmware of this machine is performed without disassembling the ROM from the machine. The new program files are collectively written into the ROM's. Some new programs can be written into an optional ROM.

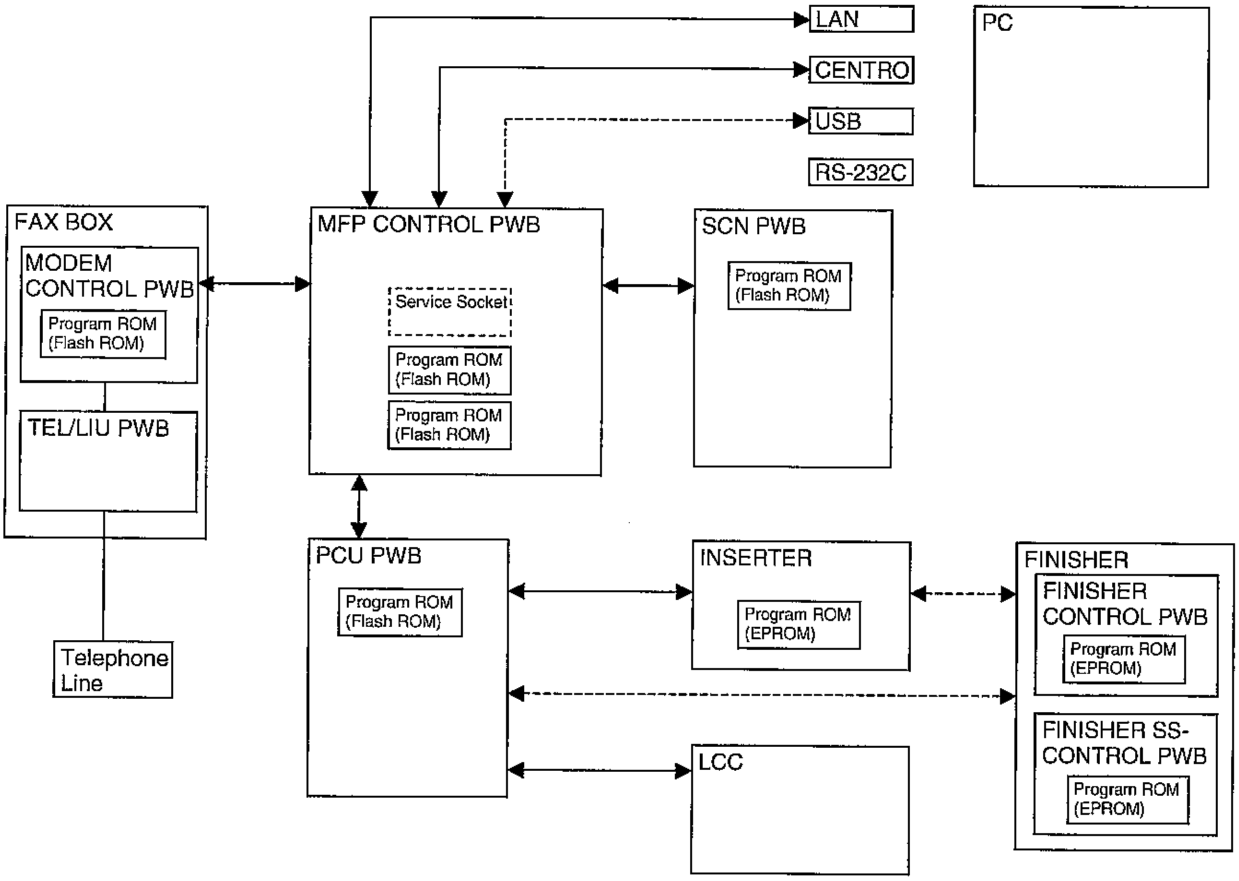
If, however, the above procedure is failed by an accident such as power interruption during the version-up procedure, use the ROM copy socket on the MFP control PWB ROM to make version-up of each ROM individually.

[Kind of ROM]

Section	Name	Type	Capacity	Replaceable
PCU PWB	PCU ROM	Flash ROM	8Mbit	Replaceable
SCN PWB	SCN ROM	Flash ROM	8Mbit	Replaceable
MFP CONTROL PWB	BOOT ROM	Flash ROM	32Mbit	Replaceable
	MAIN ROM	Flash ROM	32Mbit	Replaceable
FAX MODEM CONTROL PWB	FAX ROM	Flash ROM	8Mbit	Replaceable
FINISHER CONTROL PWB	Finisher Control ROM	EPROM	—	Replaceable
FINISHER SS-CONTROL PWB	Finisher SS-Control ROM	EPROM	—	Replaceable
INSERTER CONTROL PWB	Inserter Control ROM	EPROM	—	Replaceable

* All the Flash ROM's can be rewritten. (LAN, Centro)

[Block diagram]


LAN
CENTRO
USB
RS-232C
PC
FAX BOX
MODEM CONTROL PWB
Program ROM (Flash ROM)
TEL/LIU PWB
Telephone Line
MFP CONTROL PWB
Service Socket
Program ROM (Flash ROM)
Program ROM (Flash ROM)
SCN PWB
Program ROM (Flash ROM)
PCU PWB
Program ROM (Flash ROM)
INSERTER
Program ROM (EPROM)
LCC
FINISHER
FINISHER CONTROL PWB
Program ROM (EPROM)
FINISHER SS-CONTROL PWB
Program ROM (EPROM)

B. ROM version-up is required in the following cases:

ROM version-up is required in the following cases:

1) When improvement of performances is required.
2) When installing a new spare part ROM for repair to the machine.
3) When installing a new spare part PWB unit for repair with the ROM installed.
4) When there is a trouble in the ROM program and it must be repaired.

2. Precautions

A. Relationship between each ROM and version-up

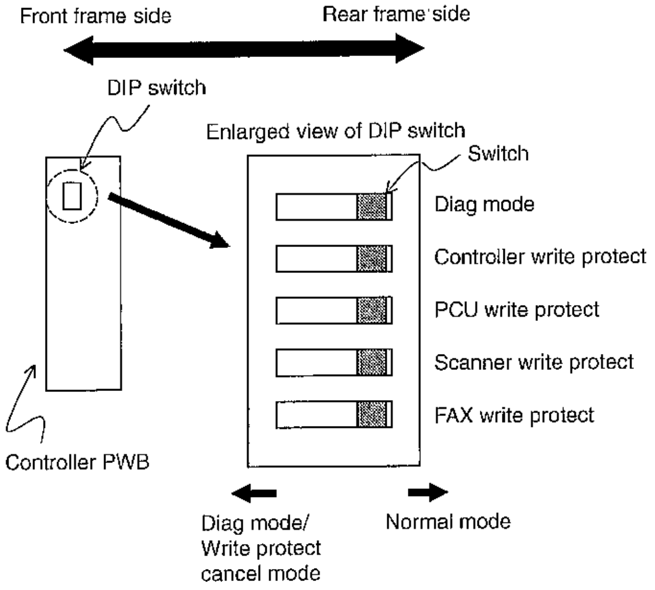
When performing ROM version-up, be sure to check the combination with the version of ROM installed in the other PWB's including optional ones.

Some combinations of ROM versions may not operate the machine properly.

3. Necessary items for Flash ROM version-up

- A machine with ROM to be operated
- A spare PCU PWB ROM, an MFP control PWB ROM (Boot, Program), a scanner control PWB ROM (Each of which is provided with the program to allow operations.) (Used when writing the program files into the ROM is failed.)
- A PC operating on MS-DOS, with either of a USB, Ethernet, or parallel port.
- USB cable, Ethernet cable, or parallel I/F cable (for connection of PC and MFP control PWB)
- FCOPY.EXE file (Parallel I/F, file transfer tool)
- File2PRN.exe file (A file transfer tool for parallel, Ethernet, and USB protocols)
- Version-up program (compression) file

(The SFU file for writing a program to each ROM of the PCU PWB, the MFP control PWB (boot, program), and the scanner control PWB, or the SFU file for writing all the programs collectively.)



4. Flash ROM version-up method

A. MFP control PWB ROM DIP switch selection and Flash ROM slot

To make version-up of the ROM, the DIP set on the MFP control PWB on the side of the machine must be properly selected.

- When writing the program into each ROM (PCU, FAX, and scanner control PWB ROM) of each PWB individually by using an empty slot for ROM copy on the MFP control PWB ROM, the protect switch and the diag mode switch of the MFP control PWB ROM are switched over.

(MFP control PWB ROM slot)

The MFP control PWB ROM is provided with three Flash ROM slots: CN4, CN5, and CN6.

The boot ROM is installed to CN4, and the main ROM is installed to CN5. CN6 is an empty slot.

Us this empty slot of the MFP control PWB, CN6, to copy the ROM program.

- When writing the program files collectively without disassembling the ROM's from the PWB's, and when writing the program files into an optional ROM:

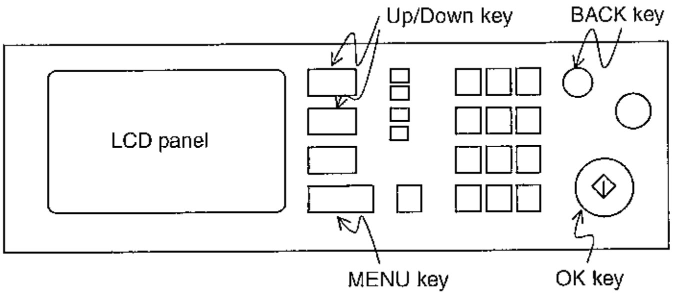
  The protect switch and the diag mode switch of the target PWB ROM of writing program files are switched.

B. Operation panel

B. Operation panel

When entering the diag mode to write into ROM, some keys on the operation panel and the LED panel are used. Necessary information including menu items and messages is displayed on the LCD panel.

[START] key is used as [OK] key, [DOCUMENT FILING] key and [FAX/IMAGE SEND] key as up/down select keys, [JOB STATUS] key as [MENU] key, and [CLEAR] key as [BACK] key.



(NOTE)

1) When performing version-up of the firmware by using the tile transfer tool (File1PRN), the printer driver of the target model must be installed in advance.
2) When performing version-up of the firmware by using the USB I/F, take note of the following items.

   Since the port for the file transfer tool (File2PRN) differs from the port for the print mode, if the port for the print mode has been already made, be careful not to mistake them. If the USB port for the print mode has been made, it is advisable to delete it in order to avoid confusion.

(Making procedures of the port for the file transfer tool (File2PRN) in the USB I/F mode)

When performing version-up of the firmware by using the USB I/F, perform the following procedures to make the port in advance.

1) Install the printer driver of the target model.

   In this case, set the port to other than the USB mode.
2) Set the DIP switch to the Flash ROM version-up mode, and turn on the power.
3) Connect the PC and the main unit with a USB cable.
4) The PC detects the new hardware by Plug & Play function.
5) The driver of SHARP AR-M620N is automatically installed. (The model name is indicated as SHARP AR-M620N, regardless of the actual model name.)

C. Version-up procedure 1

When writing the program files collectively without disassembling the ROM's from the PWB's, and when writing the program files into an optional ROM:

Note: The PCU ROM, the FAX ROM, and the scanner control PWB ROM must be provided with the program to operate. An empty ROM cannot be used.

1) Set the DIP switch to the diag mode, and set the write protect DIP switch of the target ROM to CANCEL side.

   When writing the program data into all the ROM's collectively, set all the protect switches to CANCEL side.

2) Connect the PC and the MFP control PWB with a I/F cable.
3) Turn on the PC and the machine.
4) Copy the file transfer tool and ROM program file into the PC.

   (When writing with the file transfer tool fcopy.exe via parallel I/F)

   Copy the collective ROM programming file and fcopy.exe into the same folder of the PC. (When writing with the file transfer tool File2PRN.exe)

   Copy the collective ROM programming file and the file transfer tool File2PRN.exe into the folder you desire on the PC.

5) The following display is shown after a while from starting the machine.

Version Check
CONF: *********

6) Press MENU key several time to select an I/F to use from USB, Ethernet, and parallel protocols.

   (Example)

▲

Firm Update
From USB

7) Press OK key to display the following menu.

Firm Update
Waiting Data

8) Transfer the program data from PC to the machine via either of USB, Ethernet, or parallel protocol.

8A) When transferring with the file transfer tool fcopy.exe via parallel I/F

   Boot MS-DOS from the PC. Use the FCOPY program to transfer the ROM program data from the PC to the main unit.

   (Procedure)

   Type in Fcopy followed by a file name of the ROM program data, then press Enter key.

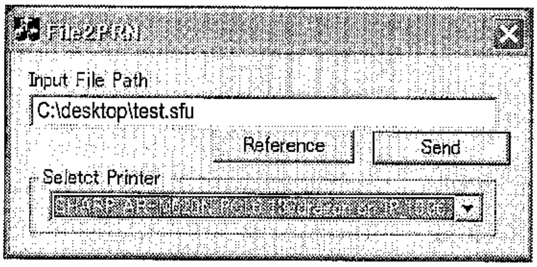
   Fcopy xxx.sfu Enter
   ↑
   ROM program data file

8B) When transferring with the file transfer tool File2PRN.exe

   Start File2PRN.exe on the PC. Use this program to transfer the ROM program data from the PC to the main unit.

   (Procedure)

   Start File2PRN.exe.



C:\desktop\test.sfu

   Click Reference button and select a ROM program to transfer.

   Select the target machine's port form Select Printer pull down list.

   Click Send button.

   The LED blinks and the LCD displays appropriate information as operation proceeds.

Note: When version-up of each ROM of the scanner control PWB is performed, the backlight of the display is turned off. This does not mean a trouble. Wait for a while.

9) When "Result: OK" is displayed after a few minutes, press Up/Down keys to check that there is no display of "Result: NG."

Note: When writing the program file data collectively to the machine without the FAX unit installed, "Result : NG" is displayed only to the FAX. This can be neglected.

Firm Update ***
Writing Data

↓

Firm Update
Waiting Data

↓

Firm Update ***
Result: OK

10) Turn off the machine, and set the DIP switch to the original position. (Normal start side)
11) Turn on the machine, and use SIM 22-5 to check that each ROM version is properly upgraded.

D. Version-up procedure 2

When writing the program into each ROM of the PCU PWB, the FAX PWB, and the scanner control PWB individually by using an empty slot for ROM copy on the MFP control PWB ROM:

Note: The program write target ROM installed to the empty slot for ROM copy on the MFP control PWB ROM may be empty. (No need to have the program data in it. The empty ROM can be used.)

1) Set the DIP switch to the diag mode, and set the write protect switch of the MFP control PWB ROM to CANCEL side.
2) Install the write target ROM to the empty slot for ROM copy on the MFP control PWB ROM.
3) Connect the PC and the MFP control PWB with a I/F cable.
4) Turn on the PC and the machine.
5) Copy the file transfer tool and ROM program file into the PC.

   (When writing with the file transfer tool fcopy.exe via parallel I/F)

   Copy the collective ROM programming file and fcopy.exe into the same folder of the PC. (When writing with the file transfer tool File2PRN.exe)

   Copy the collective ROM programming file and the file transfer tool File2PRN.exe into the folder you desire on the PC.

▲ : Feb. 9 2004

6) The following display is indicated after a while.

```
Version Check
CONF: **********
```

7) Press MENU key a few times to show the following display.

▲

```
CN Update
 From  USB
```

8) Press OK key to show the following display.

```
CN Update
 Waiting Data
```

9) Transfer the program data from PC to the machine via either of USB, Ethernet, or parallel protocol.

9A) When transferring with the file transfer tool fcopy.exe via parallel I/F

Boot MS-DOS from the PC. Use the FCOPY program to transfer the ROM program data from the PC to the main unit.

(Procedure)

Type in Fcopy followed by a file name of the ROM program data, then press Enter key.

Fcopy xxx.sfu Enter

↑

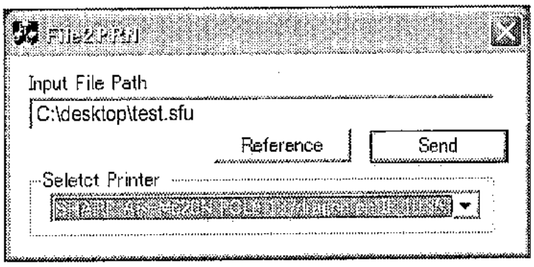
ROM program data file

9B) When transferring with the file transfer tool File2PRN.exe

Start File2PRN.exe on the PC. Use this program to transfer the ROM program data from the PC to the main unit.

(Procedure)

Start File2PRN.exe.



Input File Path: C:\desktop\test.sfu

Click Reference button and select a ROM program to transfer.

Select the target machine's port form Select Printer pull down list.

Click Send button.

The LED blinks and the LCD displays appropriate information as operation proceeds.

10) The LED stops flashing in a few minutes, and "Writing: OK" is displayed.

```
CN Update
 Receiving Data
```

↓

```
CN Update      ***
 Writing Data
```

11) Press OK key, and the following display is shown.

```
CN Update ***-> CN5
 Writing   OK ?
```

12) "CN5" and the selection menu of slot numbers is displayed. Select "CN6" to which the target ROM is inserted to with Up/Down keys, and press OK key.

13) The LED flashes and the display is changed in the following sequence.

When "Result: OK" is displayed in a few minutes, press Up/Down keys to check that there is no display of "Result: NG."

```
CN Update ***-> CN5
 Writing   Data
```

↓

```
CN Update ***-> CN5
 Result : OK
```

14) Turn off the machine, and set the DIP switch to the original state (normal boot side).

15) Remove the ROM from the empty slot CN6 for ROM copy on the MFP control PWB ROM.

16) Install the ROM with the revised version to the PWB.

17) Turn on the machine, and use SIM 22-5 to check that the ROM version is normally upgraded.

(NOTE)

Precautions on transferring a ROM program data with the file transfer tool File2PRN

For successful transferring a ROM program data with the file transfer tool File2PRN, the following conditions should be met:

- When transferring a ROM program data with the file transfer tool File2PRN, the destination machine must be configured as a printer.
- The PC must have an appropriate printer driver installed and configured with an I/F port to use.

E. Countermeasures against "Result: NG"

Factors of "Result: NG"

The following cases may be factors of "Result: NG."

* The DIP switch for write protect is not set properly.

* The FAX cable is not connected. (NG for FAX)

* ROM defect (Very rare case)

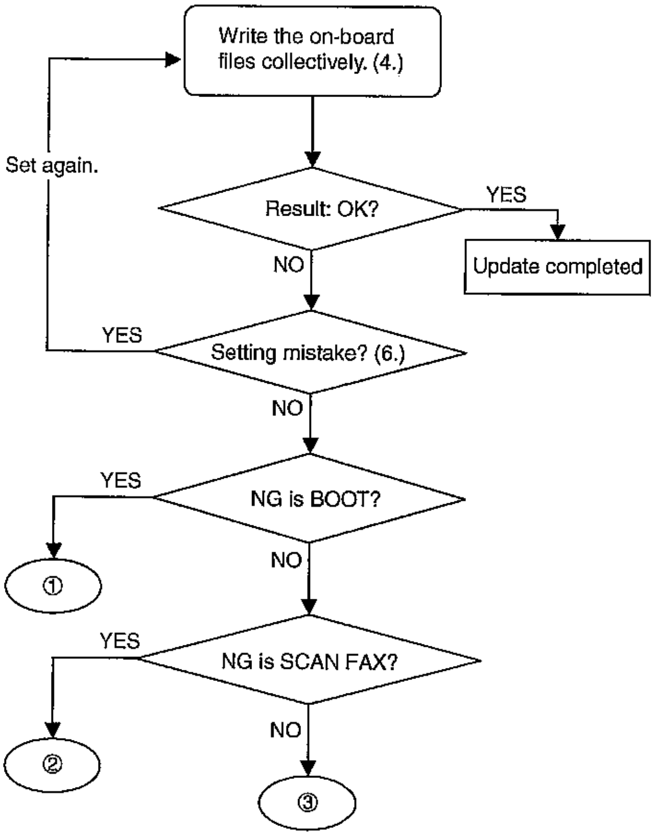
5. Turning OFF the power during the version-up procedure

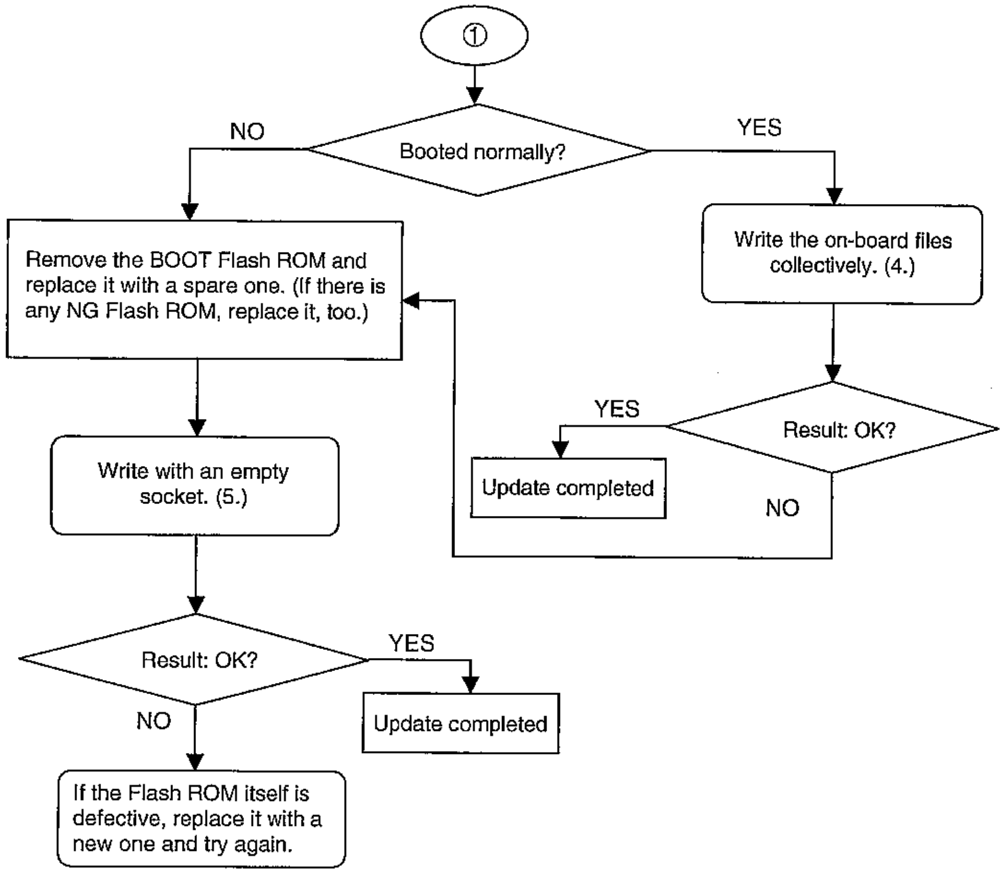
If the power is turned OFF during the version-up procedure, normal writing of data cannot be assured even though the machine can be booted again.

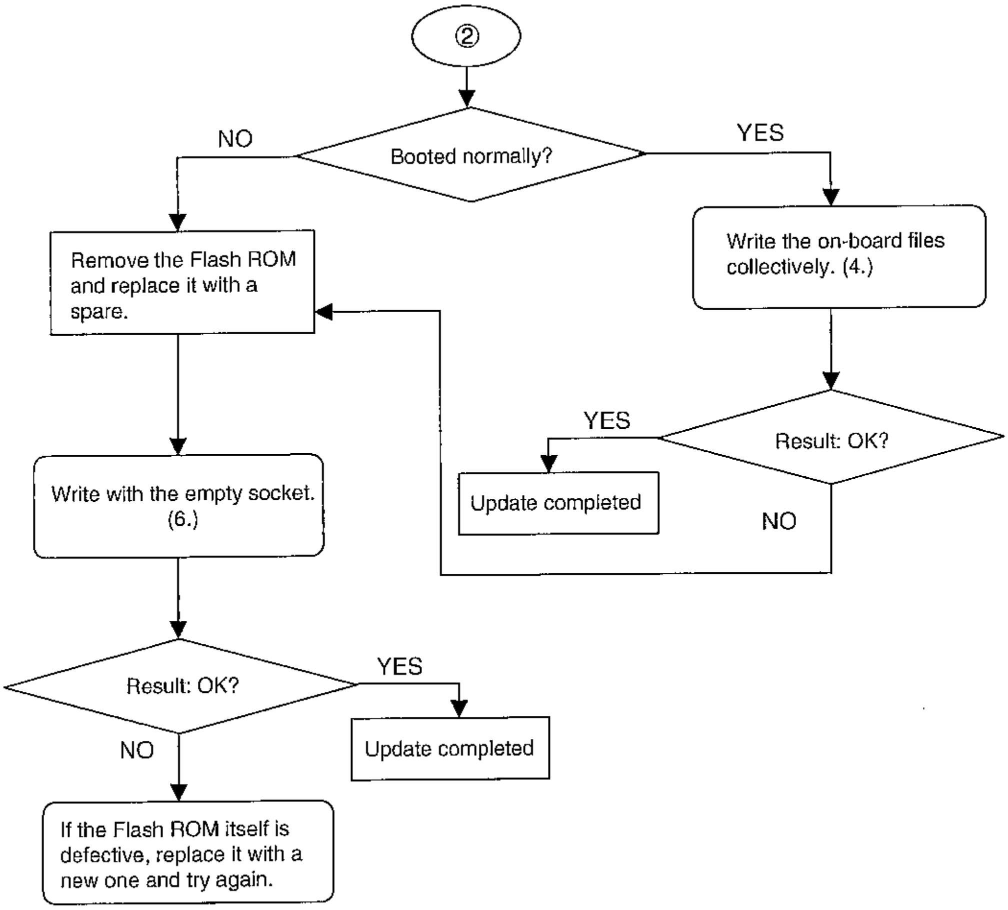
In such a case, use the spare PCU PWB ROM, the MFP control PWB ROM (boot, program), and the scanner control PWB ROM each of which includes the program to be operated, and perform the version-up procedure again.

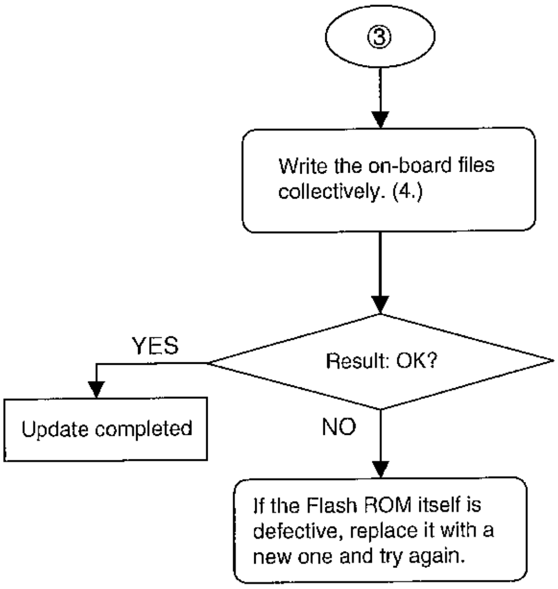
Replace with the spare PCU, the controller boot, the scanner control PWB ROM, and perform procedure "4." for the replaced ROM again to write data into it.

6. Version-up procedure flowchart


Write the on-board files collectively. (4.)
Set again.
Result: OK?
YES
Update completed
NO
YES
Setting mistake? (6.)
NO
YES
NG is BOOT?
①
NO
YES
NG is SCAN FAX?
②
NO
③

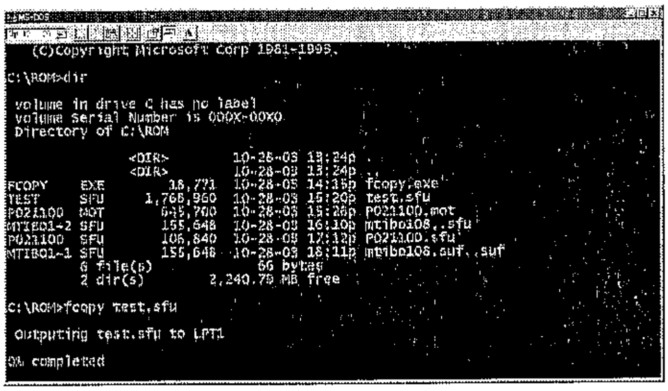

①
NO
Booted normally?
YES
Remove the BOOT Flash ROM and replace it with a spare one. (If there is any NG Flash ROM, replace it, too.)
Write the on-board files collectively. (4.)
YES
Result: OK?
Update completed
NO
Write with an empty socket. (5.)
Result: OK?
YES
Update completed
NO
If the Flash ROM itself is defective, replace it with a new one and try again.


②
Booted normally?
NO
YES
Remove the Flash ROM and replace it with a spare.
Write the on-board files collectively. (4.)
Result: OK?
YES
NO
Update completed
Write with the empty socket. (6.)
Result: OK?
YES
NO
Update completed
If the Flash ROM itself is defective, replace it with a new one and try again.


③
Write the on-board files collectively. (4.)
Result: OK?
YES
NO
Update completed
If the Flash ROM itself is defective, replace it with a new one and try again.

<Reference> How to use Fcopy.exe program

When transferring ROM program files by using Fcopy.exe program, copy Fcopy.exe program and the ROM program files in the same folder and boot MS-DOS. Then, open the above folder on MS-DOS, and type "Fcopy file name"and transfer is performed. In the example below, the SFU file is placed in C:\ROM folder, and it is transferred.



```
   (C)Copyright Microsoft Corp 1981-1999.

C:\ROM>dir

 Volume in drive C has no label
 Volume Serial Number is 000X-00X0
 Directory of C:\ROM

                 <DIR>         10-28-03  13:24p .
                 <DIR>         10-28-03  13:24p ..
FCOPY    EXE         18,771    10-28-03  14:35p fcopy.exe
TEST     SFU      1,768,960    10-28-03  15:20p test.sfu
P021100  MOT        645,700    10-28-03  15:28p P021100.mot
MTIB01~2 SFU        155,648    10-28-03  16:10p mtib0108..sfu
P021100  SFU        106,840    10-28-03  17:12p P021100.sfu
MTIB01~1 SFU        155,648    10-28-03  18:11p mtib0108.suf..suf
         6 file(s)               66 bytes
         2 dir(s)         2,240.79 MB free

C:\ROM>fcopy test.sfu

 Outputting test.sfu to LPT1

OK completed
```

⚠1: Feb. 9 2004

[11] MAINTENANCE LIST

1. Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❏: Shift position

			AR-M550N/U (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
⚠1			AR-M620N/U, AR-M700N/U (PM: 300K)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
	Unit name	No.	Part name										
	Drum peripheral section	1	OPC drum	×	▲	▲	▲	▲	▲	▲	▲	▲	
		2	Cleaning blade	×	▲	▲	▲	▲	▲	▲	▲	▲	
		3	Toner reception seal	×	▲	▲	▲	▲	▲	▲	▲	▲	
		4	Side seal F/R	×	▲	▲	▲	▲	▲	▲	▲	▲	
		5	Drum separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	
		6	Discharge lamp	×	○	○	○	○	○	○	○	○	
		7	Image density sensor	×	○	○	○	○	○	○	○	○	
		8	OPC drum marking sensor	×	○	○	○	○	○	○	○	○	
		9	Sawtooth plate	○	▲	▲	▲	▲	▲	▲	▲	▲	
		10	Screen grid	×	▲	▲	▲	▲	▲	▲	▲	▲	
		11	MC cleaner		▲	▲	▲	▲	▲	▲	▲	▲	
		12	Side seal R base sheet		▲	▲	▲	▲	▲	▲	▲	▲	
		13	Cleaning brush		×	×	×	×	×	×	×	×	
	Transfer section	1	Transfer belt	○	▲	▲	▲	▲	▲	▲	▲	▲	
		2	Transfer roller		▲	▲	▲	▲	▲	▲	▲	▲	
		3	Transfer drive gear		▲	▲	▲	▲	▲	▲	▲	▲	
		4	Transfer cleaning roller		▲	▲	▲	▲	▲	▲	▲	▲	
		5	Shaft (Conductive grease)	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ
	Developing section	1	Developer		▲	▲	▲	▲	▲	▲	▲	▲	Supply when installing
		2	DV seal		▲	▲	▲	▲	▲	▲	▲	▲	
		3	MG holder F/R	○	○	○	○	○	○	○	○	○	
		4	DV side seal F		▲	▲	▲	▲	▲	▲	▲	▲	
		5	Toner bottle										Assembly when installing/ Replacement by user when empty
		6	Toner hopper	○	○	○	○	○	○	○	○	○	
	Fusing section	1	Heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
		2	Fusing roller (Pressing)	×	▲	▲	▲	▲	▲	▲	▲	▲	
		3	Sub heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
		4	Cleaning sheet	×	▲	▲	▲	▲	▲	▲	▲	▲	
		5	Cleaning scraper	×	▲	▲	▲	▲	▲	▲	▲	▲	
		6	Heat roller separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	
		7	Fusing roller (Pressing) separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	
		8	Thermistor	×	×	×	×	×	×	×	×	×	Paper dust removal is required.
		9	Heat roller gear (Grease)		×	×	×	×	×	×	×	×	UKOG-0235FCZZ
		10	Sub heat roller bearing		▲	▲	▲	▲	▲	▲	▲	▲	
		11	Paper guides	○	○	○	○	○	○	○	○	○	
		12	Shaft (Grease)		☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0235FCZZ
⚠1		13	Oil roller (AR-M700N/U)	×	▲	▲	▲	▲	▲	▲	▲	▲	
⚠1		14	Cleaning plate (AR-M700N/U)	×	▲	▲	▲	▲	▲	▲	▲	▲	
⚠1		15	CL roller bearing (AR-M700N/U)	×	▲	▲	▲	▲	▲	▲	▲	▲	
	Filters	1	Ozone filter		▲	▲	▲	▲	▲	▲	▲	▲	
⚠1		2	DV ozone filter		▲	▲	▲	▲	▲	▲	▲	▲	
		3	Toner filter		▲	▲	▲	▲	▲	▲	▲	▲	
⚠1	Paper feed section	1	Paper pickup roller	×	×	×	×	×	×	×	×	×	(Note 1)
		2	Paper feed roller	×	×	×	×	×	×	×	×	×	(Note 1)
		3	Separation roller	×	×	×	×	×	×	×	×	×	(Note 1)
		4	Torque limiter	×	×	×	×	×	×	×	×	×	(Note 1)
		5	Shaft (Conductive grease)	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ

⚠ : Feb. 9 2004

Unit name	No.	Part name	When calling	250K 300K	500K 600K	750K 900K	1000K 1200K	1250K 1500K	1500K 1800K	1750K 2100K	2000K 2400K	Remark
		AR-M550N/U (PM: 250K) AR-M620N/U, AR-M700N/U (PM: 300K)										
Transport section/ paper exit reverse section/ duplex section	1	PS follower roller	×	○	○	○	○	○	○	○	○	
	2	Transport rollers	×	○	○	○	○	○	○	○	○	
	3	Transport paper guides	○	○	○	○	○	○	○	○	○	
	4	Discharge brush	×	×	×	×	×	×	×	×	×	
	5	Shaft (Conductive grease)	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ
	6	Paper dust cleaner	○	▲	▲	▲	▲	▲	▲	▲	▲	
	7	Sensors	○	○	○	○	○	○	○	○	○	Optical reflection sensor
Drive section	1	Gear (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0307FCZZ
	2	Gear (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0299FCZZ
	3	Gear (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0062FCZZ
	4	Gear (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0235FCZZ
	5	Gear (Conductive grease)	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ
	6	Belts		×	×	×	×	×	×	×	×	
Image-related sections	1		×	×	×	×	×	×	×	×	×	

(Document scan section)

Unit name		No.	Part name	When calling	250K 300K	500K 600K	750K 900K	1000K 1200K	1250K 1500K	1500K 1800K	1750K 2100K	2000K 2400K	Remark
			AR-M550N/U (PM: 250K) AR-M620N/U, AR-M700N/U (PM: 300K)										
Optical section		1	Mirror, lens, reflector, sensors	○	○	○	○	○	○	○	○	○	
		2	Table glass/ Dust-proof glass/ OC	○	○	○	○	○	○	○	○	○	
		3	White reference glass	○	○	○	○	○	○	○	○	○	
		4	Rails		☆	☆	☆	☆	☆	☆	☆	☆	
		5	Drive belt, drive wire, pulley		×	×	×	×	×	×	×	×	
SPF	Paper feed/ Transport section	1	Paper feed roller	×	×	×	×	×	×	×	×	×	(Note 1)
		2	Pickup roller	×	×	×	×	×	×	×	×	×	(Note 1)
		3	Separation roller	×	×	×	×	×	×	×	×	×	(Note 1)
		4	No. 1 resist roller (Drive)	○	○	○	○	○	○	○	○	○	
		5	Torque limiter		×	×	×	×	×	×	×	×	(Note 1)
		6	Transport roller 1 (Drive)	○	○	○	○	○	○	○	○	○	
		7	Transport roller 2 (Drive)	○	○	○	○	○	○	○	○	○	
		8	Exposure section (CIS unit)	○	○	○	○	○	○	○	○	○	
	Paper exit section	9	No. 2 resist roller (Drive)	○	○	○	○	○	○	○	○	○	
		10	Paper exit roller (Drive)	○	○	○	○	○	○	○	○	○	
	Drive section	11	Gears (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0299FCZZ
		12	Belts		×	×	×	×	×	×	×	×	

(Note 1) Replacement reference: For replacement, refer to each paper feed counter value.

Paper feed tray 1 and 2	:	200K or 1 year
Manual paper feed/paper feed tray 3 and 4	:	100K or 1 year
SPF section	:	100K or 1 year
Torque limiter	:	800K (However, 400K for manual paper feed section)

(NOTE) Paper feed section roller life

Since each roller life is 100K or 200K, if a certain paper feed unit is intensively used, its life may be expired before the regular maintenance timing.

In actual, however, different sizes of paper are used with different paper feed trays. Therefore, it is quite rare to have to replace one of the rollers before the maintenance timing.

When a certain size of paper is used intensively, it is advisable to set two or more paper feed trays for that paper size as far as possible. This note should be explained to the user.

When servicing, be sure to check the use frequency of each paper feed tray, and replace a roller if necessary.

When cleaning rollers, it is advisable to use wet waste cloth to wipe and clean.

Since the paper feed trays 3 and 4 are used for larger sizes of paper than the paper feed trays 1 and 2, the life times of their rollers are shorter than those of the paper feed rollers 1 and 2.

The degree of wear of the paper pickup roller is greater than that of the paper feed roller, which greater than that of the separation roller.

(Paper pickup roller > paper feed roller > separation roller)

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⚠

AR-M550N/U (PM: 250K)				When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
AR-M620N/U, AR-M700N/U (PM: 300K)					300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name		No.	Part name										
LCC	Paper feed separation section	1	Paper pickup roller /Paper feed rollers	×	○	○	○	○	○	○	○	○	(Note 3)
		2	Torque limiter	×	×	×	×	×	×	×	×	×	(Note 3)
	Transport section	3	Transport rollers	×	○	○	○	○	○	○	○	○	
		4	Transport paper guides	○	○	○	○	○	○	○	○	○	
	Drive section	5	Gears	×	☆	☆	☆	☆	☆	☆	☆	☆	(Specified position)
		6	Belt		×	×	×	×	×	×	×	×	
	Others	7	Sensors	×	×	×	×	×	×	×	×	×	
Saddle finisher Punch unit	Transport section	1	Transport rollers	×	○	○	○	○	○	○	○	○	
		2	Transport paper guides	×	○	○	○	○	○	○	○	○	
	Drive section	3	Gears	×	☆	☆	☆	☆	☆	☆	☆	☆	(Specified position)
		4	Belts		×	×	×	×	×	×	×	×	
	Staple process section	5	Knurling belt	×	○	○	○	○	○	○	○	○	(Note 4)
		6	Paddle	×	○	○	○	○	○	○	○	○	(Note 4)
	Others	7	Sensors	×	×	×	×	×	×	×	×	×	
		8	Discharge brush	×	×	×	×	×	×	×	×	×	
	Stapler unit												Replacement reference: Replace the unit at 500K staple.
	Stitcher unit (Stapler unit for saddle)												Replacement reference: Replace the unit at 200K staple.
	Punch unit												Replacement reference: Replace the unit at 1000K.
	Staple cartridge												User replacement at every 5000 pcs.
	Stitcher staple cartridge (Staple cartridge for saddle)												User replacement at every 2000 pcs.
Inserter	Paper feed separation section	1	Paper pickup roller /Paper feed rollers	×	○	○	○	○	○	○	○	○	(Note 5)
		2	Torque limiter	×	×	×	×	×	×	×	×	×	(Note 5)
	Transport section	3	Transport rollers	×	○	○	○	○	○	○	○	○	
		4	Transport paper guides	○	○	○	○	○	○	○	○	○	
	Drive section	5	Gears	×	☆	☆	☆	☆	☆	☆	☆	☆	(Specified position)
		6	Belts		×	×	×	×	×	×	×	×	
	Others	7	Sensors	×	×	×	×	×	×	×	×	×	

(Note 3) Replacement reference: For replacement, refer to each paper feed counter value.
Paper feed roller related section: 200K or 1 year
Torque limiter: 800K

(Note 4) Replacement reference: For replacement, refer to the finisher paper exit counter value.
Knurling belt: 1000K
Paddle: 1000K

(Note 5) Replacement reference: For replacement, refer to the inserter paper feed port counter value.
Paper feed roller related section: 150K or 1 year
Torque limiter: 400K

⚠: Feb. 9 2004

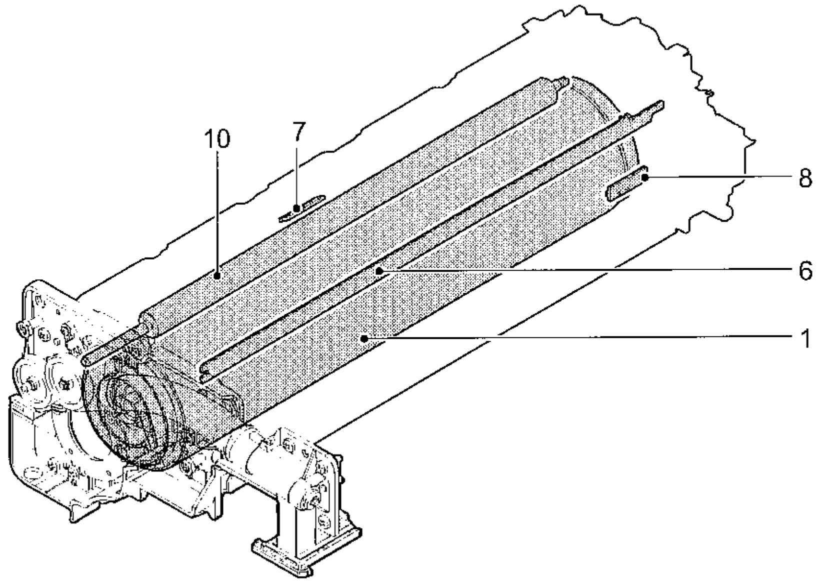
2. Details

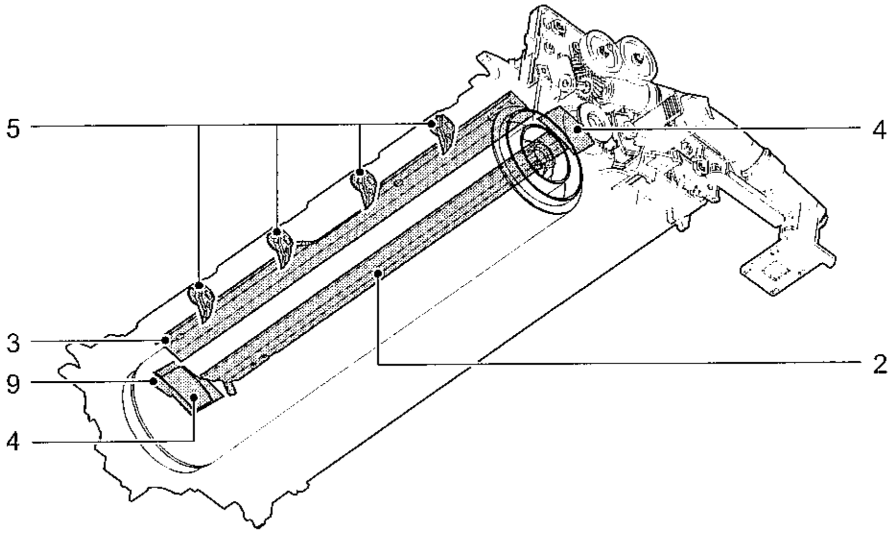
A. Drum peripheral section

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ⊔: Shift position

⚠

		AR-M550N/U (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620N/U, AR-M700N/U (PM: 300K)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Drum peripheral section	1	OPC drum	×	▲	▲	▲	▲	▲	▲	▲	▲	
	2	Cleaning blade	×	▲	▲	▲	▲	▲	▲	▲	▲	
	3	Toner reception seal	×	▲	▲	▲	▲	▲	▲	▲	▲	
	4	Side seal F/R	×	▲	▲	▲	▲	▲	▲	▲	▲	
	5	Drum separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	
	6	Discharge lamp	×	○	○	○	○	○	○	○	○	
	7	Image density sensor	×	○	○	○	○	○	○	○	○	
	8	OPC drum marking sensor	×	○	○	○	○	○	○	○	○	
	9	Side seal R base sheet		▲	▲	▲	▲	▲	▲	▲	▲	
	10	Cleaning brush		×	×	×	×	×	×	×	×	

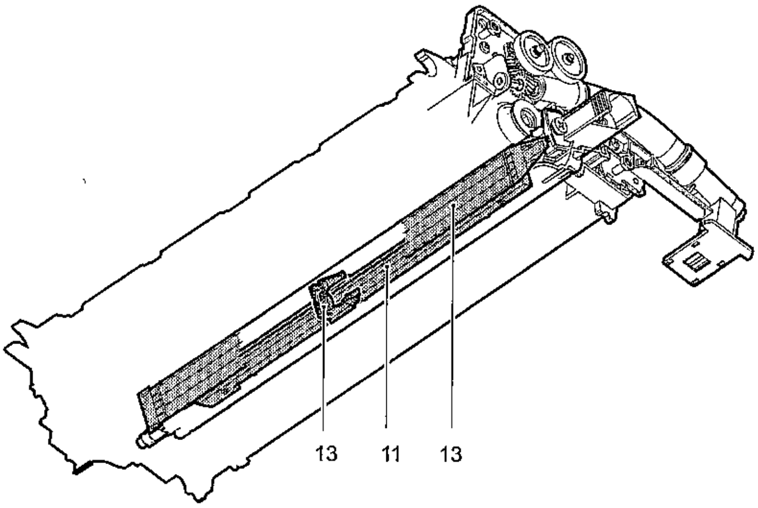




▲1 : Feb. 9 2004

▲1

		AR-M550N/U (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620N/U, AR-M700N/U (PM: 300K)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Drum peripheral section	11	Sawtooth plate	○	▲	▲	▲	▲	▲	▲	▲	▲	
	12	Screen grid	×	▲	▲	▲	▲	▲	▲	▲	▲	
	13	MC cleaner		▲	▲	▲	▲	▲	▲	▲	▲	



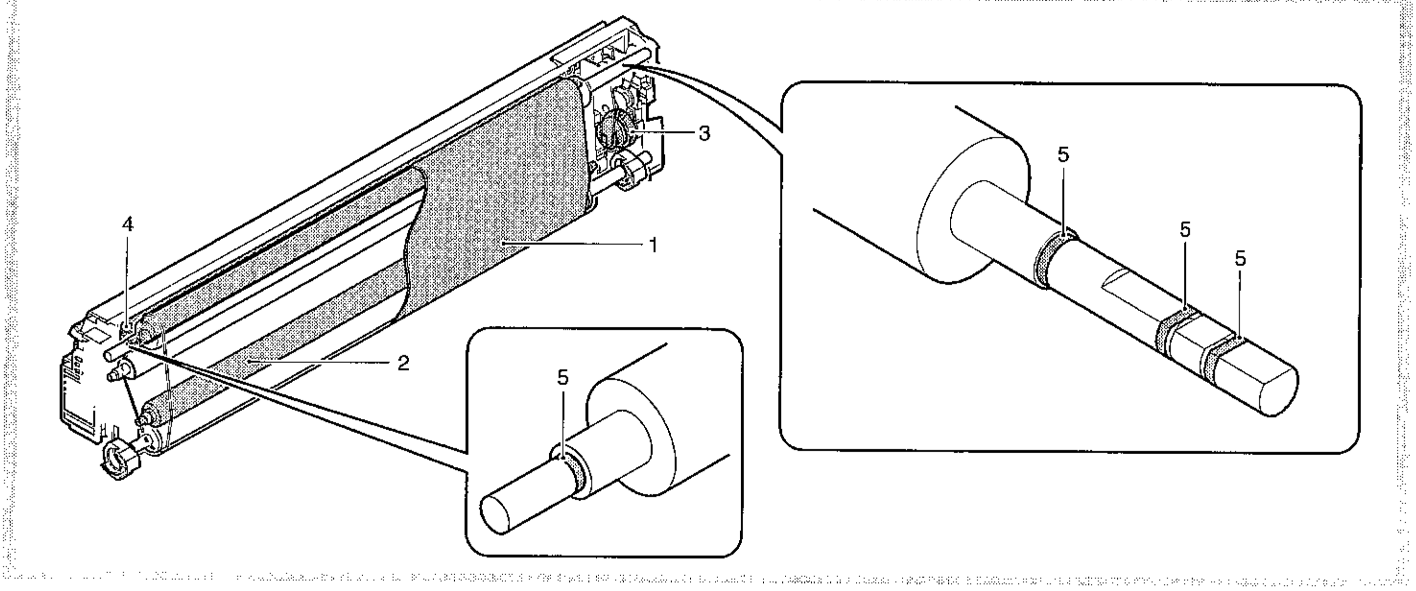
B. Transfer section

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❏: Shift position

▲1

		AR-M550N/U (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620N/U, AR-M700N/U (PM: 300K)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Transfer section	1	Transfer belt	○	▲	▲	▲	▲	▲	▲	▲	▲	
	2	Transfer roller		▲	▲	▲	▲	▲	▲	▲	▲	
	3	Transfer drive gear		▲	▲	▲	▲	▲	▲	▲	▲	
	4	Transfer cleaning roller		▲	▲	▲	▲	▲	▲	▲	▲	
▲1	5	Shaft (Conductive grease)	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ

▲1 * When cleaning the transfer belt, do not use alcohol, solvent, and water, but use dry waste cloth.



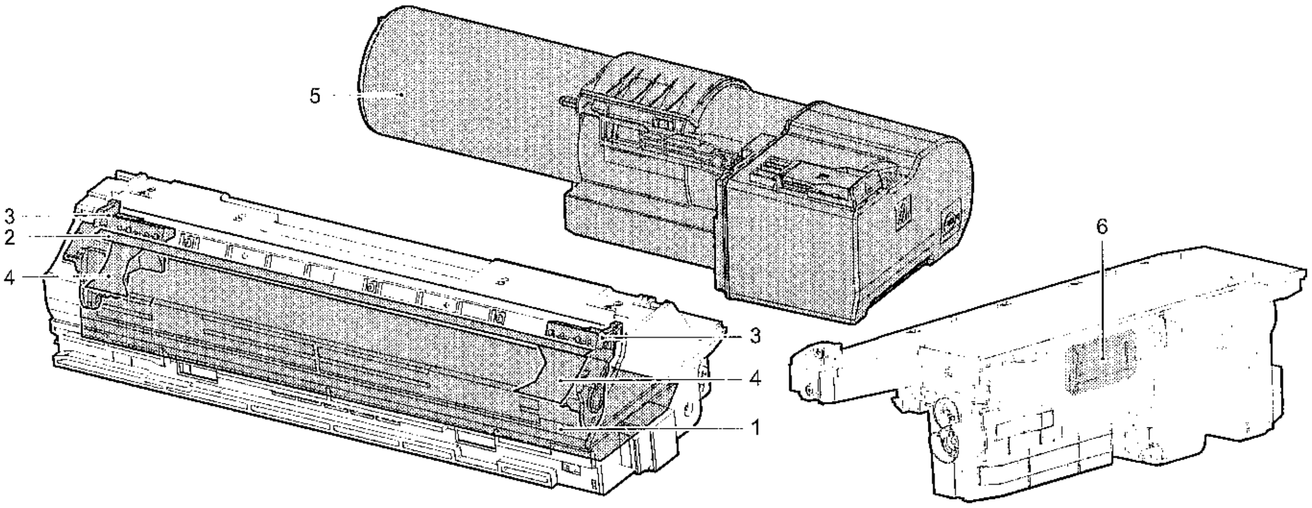
△1 : Feb. 9 2004

C. Developing section

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❏: Shift position

△1

		AR-M550N/U (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620N/U, AR-M700N/U (PM: 300K)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Developing section	1	Developer		▲	▲	▲	▲	▲	▲	▲	▲	Supply when installing
	2	DV seal		▲	▲	▲	▲	▲	▲	▲	▲	
	3	MG holder F/R	○	○	○	○	○	○	○	○	○	
	4	DV side seal F/R		▲	▲	▲	▲	▲	▲	▲	▲	
	5	Toner bottle										Assembly when installing/ Replacement by user when empty
	6	Toner hopper	○	○	○	○	○	○	○	○	○	Clean the shutter area.

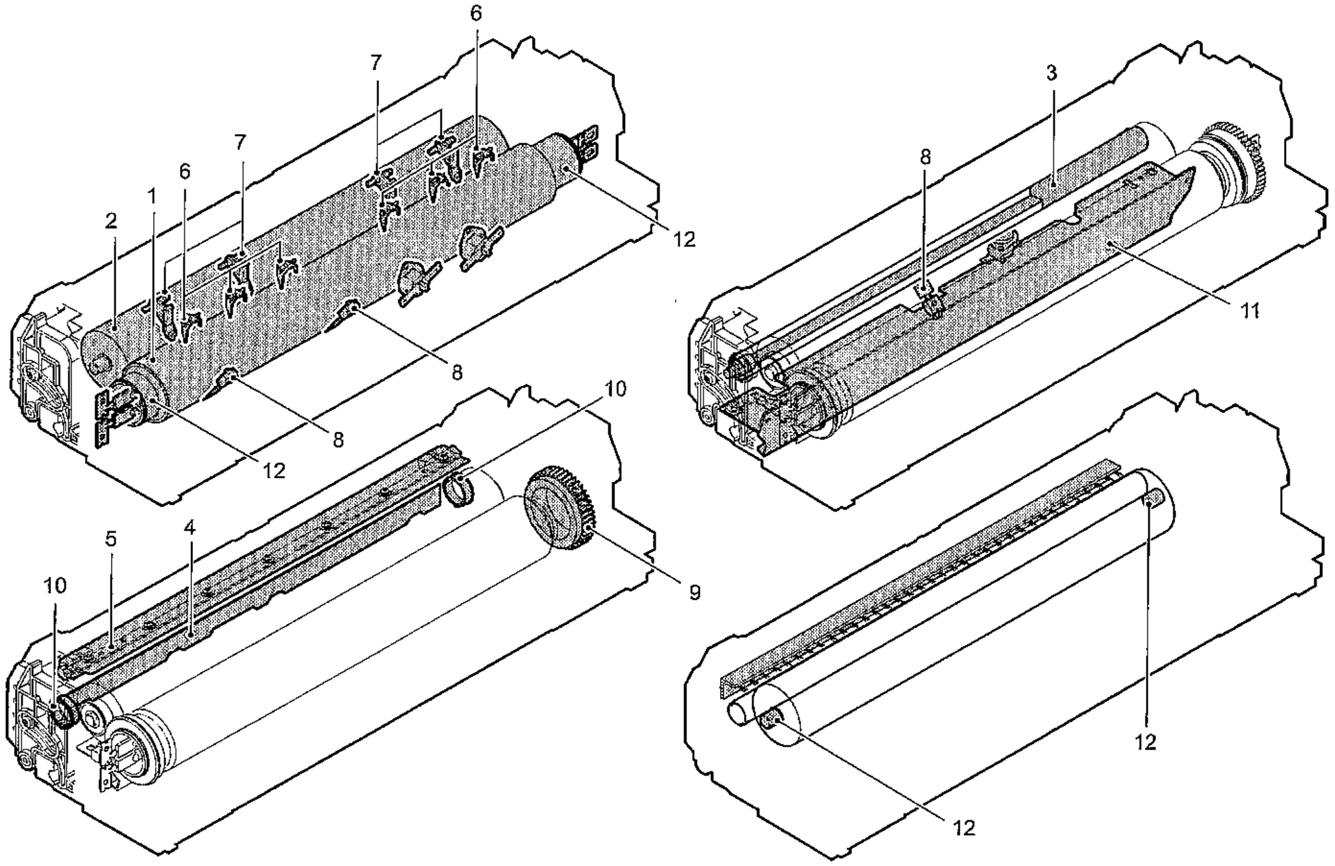


D. Fusing section

■ AR-M550N/U, AR-M620N/U

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift position

		AR-M550N/U (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620N/U (PM: 300K)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Fusing section	1	Heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
	2	Fusing roller (Pressing)	×	▲	▲	▲	▲	▲	▲	▲	▲	
	3	Sub heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
	4	Cleaning sheet	×	▲	▲	▲	▲	▲	▲	▲	▲	
	5	Cleaning scraper	×	▲	▲	▲	▲	▲	▲	▲	▲	
	6	Heat roller separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	
	7	Fusing roller (Pressing) separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	
	8	Thermistor	×	×	×	×	×	×	×	×	×	Paper dust removal is required.
	9	Heat roller gear (Grease)		×	×	×	×	×	×	×	×	UKOG-0235FCZZ
	10	Sub heat roller bearing		▲	▲	▲	▲	▲	▲	▲	▲	
	11	Paper guides	○	○	○	○	○	○	○	○	○	
	12	Shaft (Grease)		☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0235FCZZ

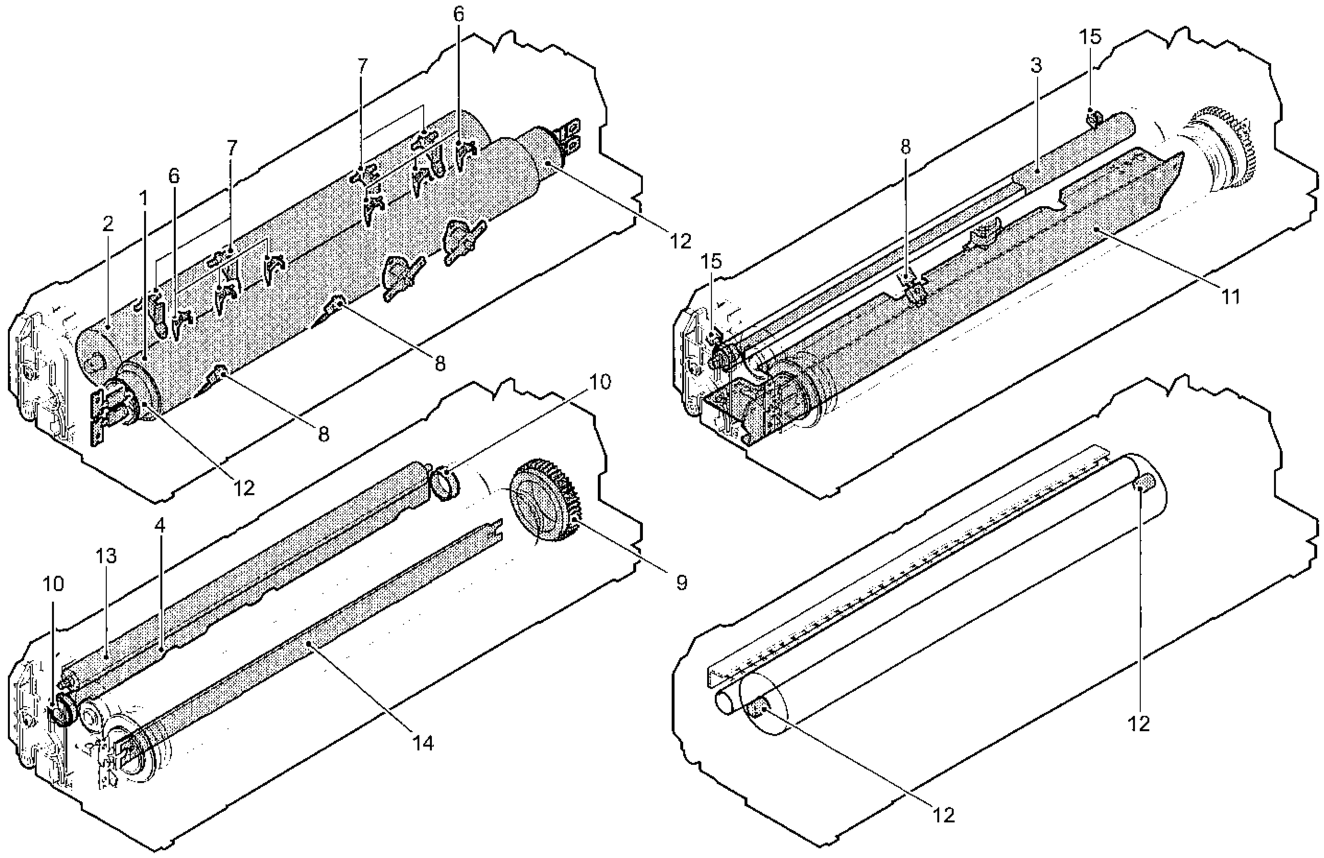


⚠ : Feb. 9 2004

⚠ ■ AR-M700N/U

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ⊔: Shift position

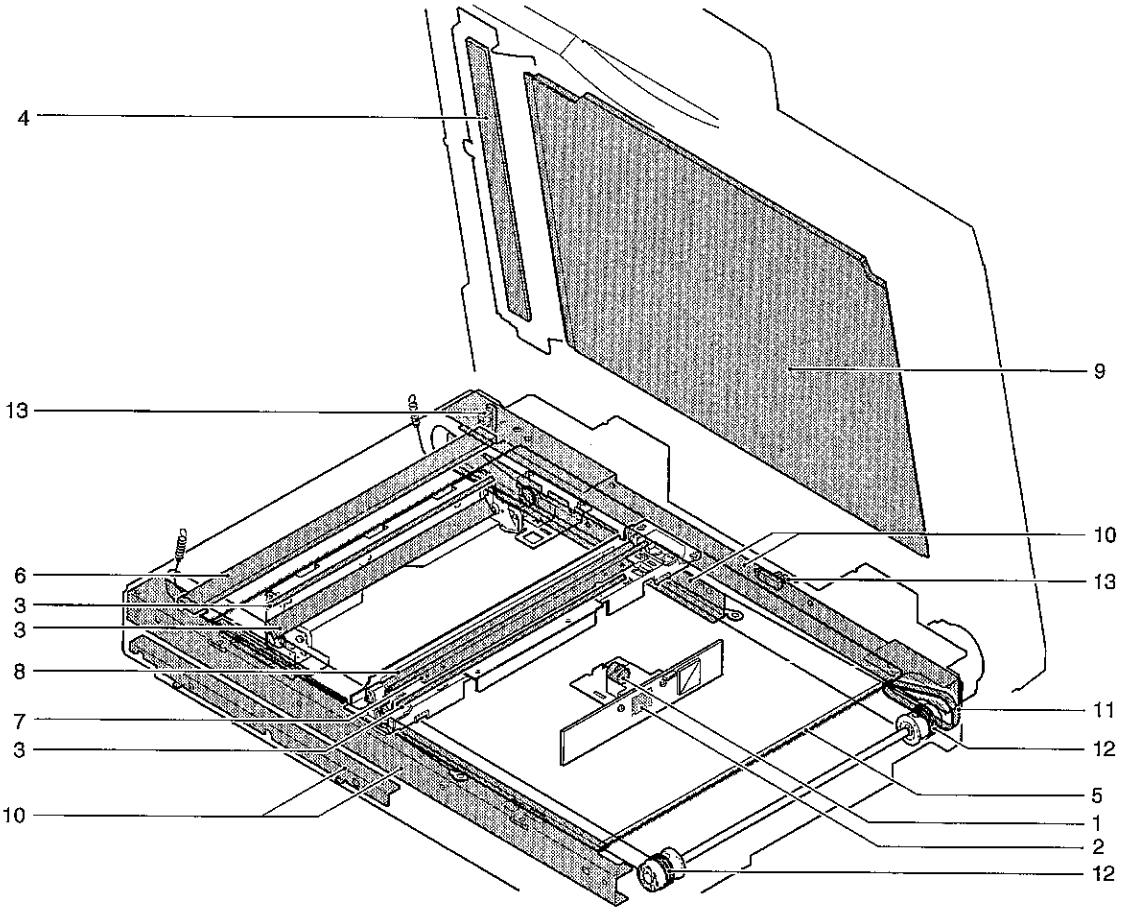
Unit name	No.	AR-M700N/U (PM: 300K) Part name	When calling	300K	600K	900K	1200K	1500K	1800K	2100K	2400K	Remark
Fusing section	1	Heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
	2	Fusing roller (Pressing)	×	▲	▲	▲	▲	▲	▲	▲	▲	
	3	Sub heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
	4	Cleaning sheet	×	▲	▲	▲	▲	▲	▲	▲	▲	
	6	Heat roller separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	
	7	Fusing roller (Pressing) separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	
	8	Thermistor	×	×	×	×	×	×	×	×	×	Paper dust removal is required.
	9	Heat roller gear (Grease)		×	×	×	×	×	×	×	×	UKOG-0235FCZZ
	10	Sub heat roller bearing		▲	▲	▲	▲	▲	▲	▲	▲	
	11	Paper guides	○	○	○	○	○	○	○	○	○	
	12	Shaft (Grease)		☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0235FCZZ
	13	Oil roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
	14	Cleaning plate	×	▲	▲	▲	▲	▲	▲	▲	▲	
	15	CL roller bearing	×	▲	▲	▲	▲	▲	▲	▲	▲	



▲: Feb. 9 2004

E. Scanner section

		AR-M550N/U (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
▲		AR-M620N/U, AR-M700N/U (PM: 300K)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Scanner section	1	Lens		○	○	○	○	○	○	○	○	
	2	CCD		○	○	○	○	○	○	○	○	
	3	Mirror		○	○	○	○	○	○	○	○	
	4	CIS filter glass		○	○	○	○	○	○	○	○	
	5	Table glass		○	○	○	○	○	○	○	○	
	6	Slit glass (SPF scan mode)		○	○	○	○	○	○	○	○	
	7	Reflector		○	○	○	○	○	○	○	○	
	8	Scanner lamp		○	○	○	○	○	○	○	○	
	9	Document mat		○	○	○	○	○	○	○	○	
	10	Rail (Grease)		☆	☆	☆	☆	☆	☆	☆	☆	
	11	Drive belt		×	×	×	×	×	×	×	×	
	12	Drive wire		×	×	×	×	×	×	×	×	
	13	Sensors		×	×	×	×	×	×	×	×	



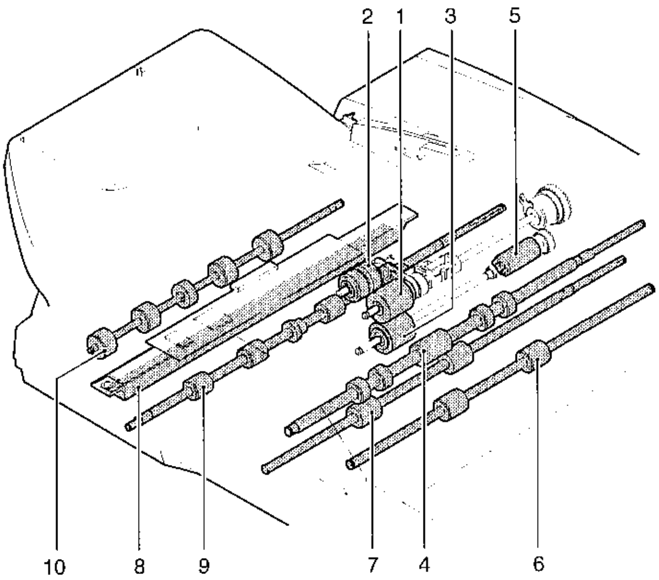
▲1 : Feb. 9 2004

F. SPF section

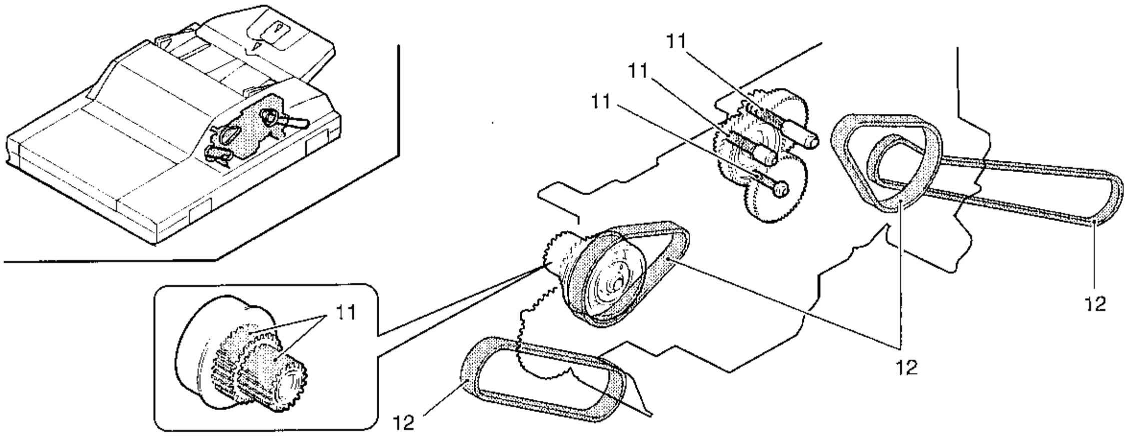
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift position

				AR-M550N/U (PM: 250K)	When	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
▲1				AR-M620N/U, AR-M700N/U (PM: 300K)	calling	300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
	Unit name		No.	Part name										
▲1	SPF	Paper feed/ Transport section	1	Paper feed roller	×	×	×	×	×	×	×	×	×	(Note 1)
			2	Pickup roller	×	×	×	×	×	×	×	×	×	(Note 1)
			3	Separation roller	×	×	×	×	×	×	×	×	×	(Note 1)
			4	No. 1 resist roller (Drive)	○	○	○	○	○	○	○	○	○	
			5	Torque limiter		×	×	×	×	×	×	×	×	(Note 1)
			6	Transport roller 1 (Drive)	○	○	○	○	○	○	○	○	○	
			7	Transport roller 2 (Drive)	○	○	○	○	○	○	○	○	○	
			8	Exposure section (CIS unit)	○	○	○	○	○	○	○	○	○	
		Paper exit section	9	No. 2 resist roller (Drive)	○	○	○	○	○	○	○	○	○	
			10	Paper exit roller (Drive)	○	○	○	○	○	○	○	○	○	
▲1		Drive section	11	Gears (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0299FCZZ
			12	Belts		×	×	×	×	×	×	×	×	

(Note 1) Replacement reference: For replacement, refer to each paper feed counter value.
SPF section : 100K or 1 year



▲1



⚠: Feb. 9 2004

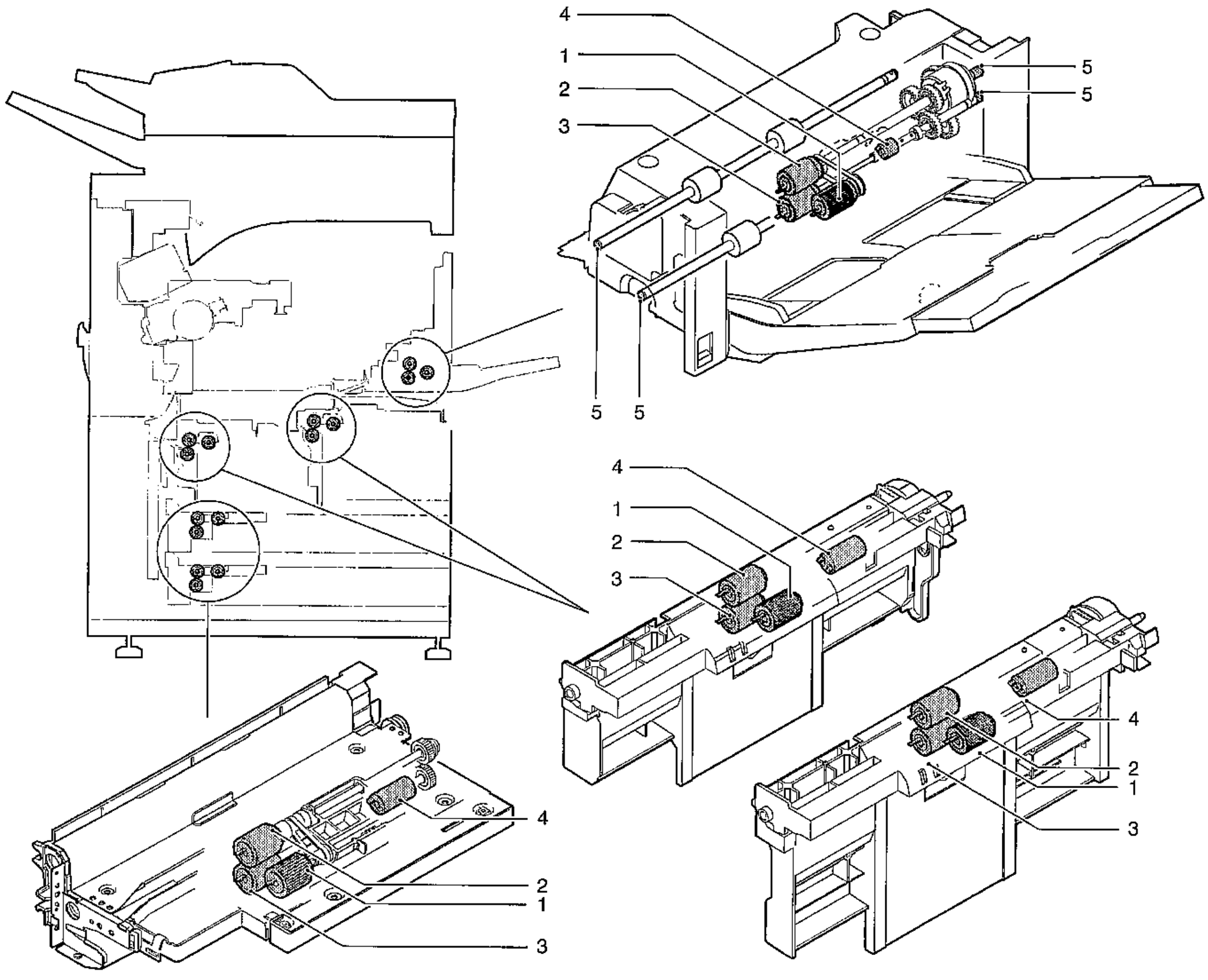
G. Paper feed section

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❑: Shift position

		AR-M550N/U (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
		AR-M620N/U, AR-M700N/U (PM: 300K)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
⚠ Paper feed section	1	Paper pickup roller	×	×	×	×	×	×	×	×	×	(Note 1)
	2	Paper feed roller	×	×	×	×	×	×	×	×	×	(Note 1)
	3	Separation roller	×	×	×	×	×	×	×	×	×	(Note 1)
	4	Torque limiter	×	×	×	×	×	×	×	×	×	(Note 1)
	5	Shaft (Conductive grease)	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ

(Note 1) Replacement reference: For replacement, refer to each paper feed counter value.

Paper feed tray 1 and 2 : 200K or 1 year
Manual paper feed/paper feed tray 3 and 4 : 100K or 1 year
SPF section : 100K or 1 year
Torque limiter : 800K (However, 400K for manual paper feed section)



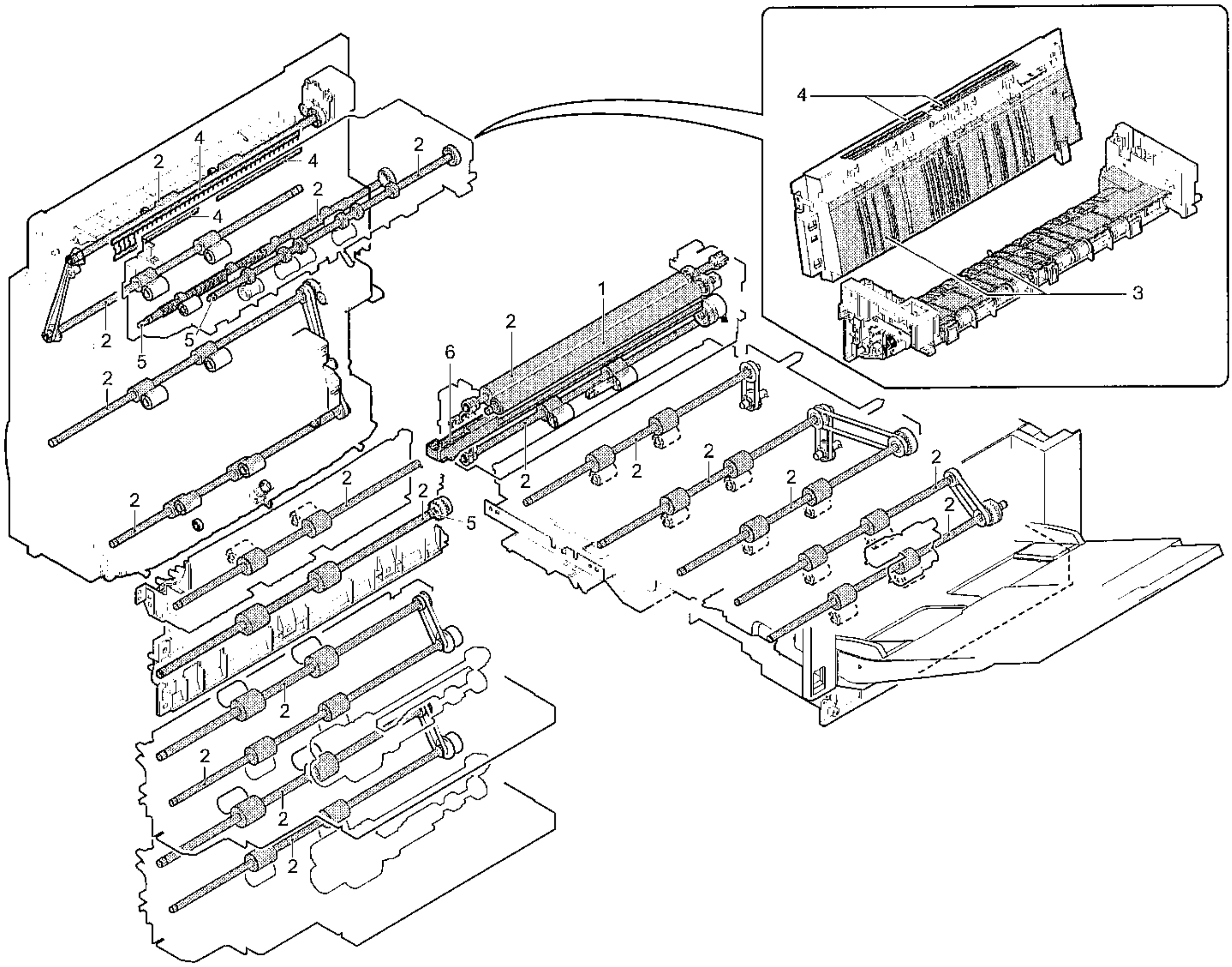
⚠1 : Feb. 9 2004

H. Transport section/paper exit reverse section/duplex section

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift position

			AR-M550N/U (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
⚠1			AR-M620N/U, AR-M700N/U (PM: 300K)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
	Unit name	No.	Part name										
	Transport section	1	PS follower roller	×	○	○	○	○	○	○	○	○	
⚠1	Paper exit reverse section/ duplex section	1	PS follower roller	×	○	○	○	○	○	○	○	○	
		2	Transport rollers	×	○	○	○	○	○	○	○	○	
		3	Transport paper guides	○	○	○	○	○	○	○	○	○	
		4	Discharge brush	×	×	×	×	×	×	×	×	×	
		5	Shaft (Conductive grease)	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ
⚠1	Other	6	Paper dust cleaner	○	▲	▲	▲	▲	▲	▲	▲	▲	

⚠1

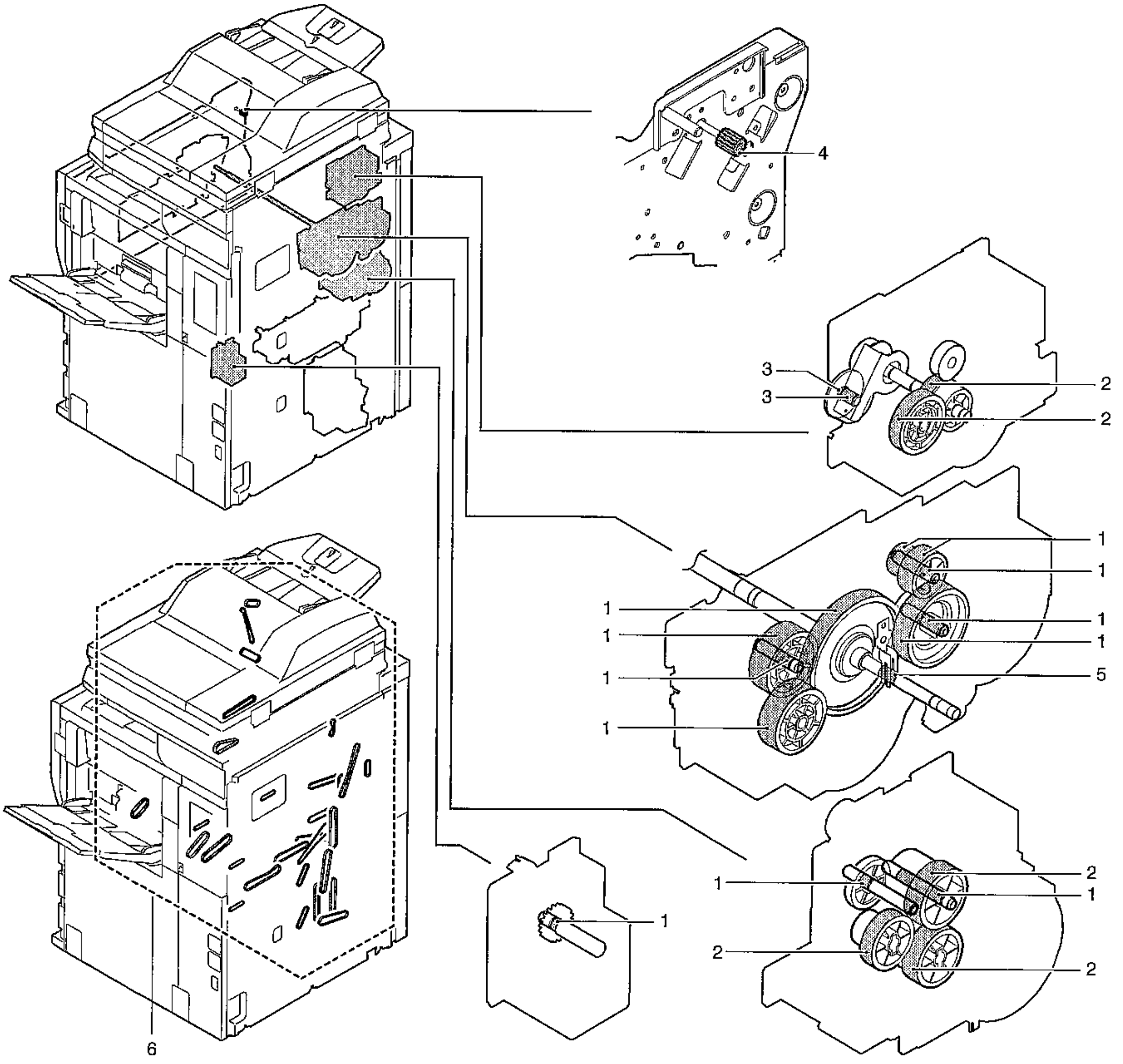


▲1 : Feb. 9 2004

I. Drive section

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ❑: Shift position

		AR-M550N/U (PM: 250K)	When calling	250K	500K	750K	1000K	1250K	1500K	1750K	2000K	Remark
▲1		AR-M620N/U, AR-M700N/U (PM: 300K)		300K	600K	900K	1200K	1500K	1800K	2100K	2400K	
Unit name	No.	Part name										
Drive section	1	Gear (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0307FCZZ
	2	Gear (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0299FCZZ
	3	Gear (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0062FCZZ
	4	Gear (Grease)	×	×	×	×	×	×	×	×	×	UKOG-0235FCZZ
	5	Gear (Conductive grease)	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ
	6	Belts		×	×	×	×	×	×	×	×	



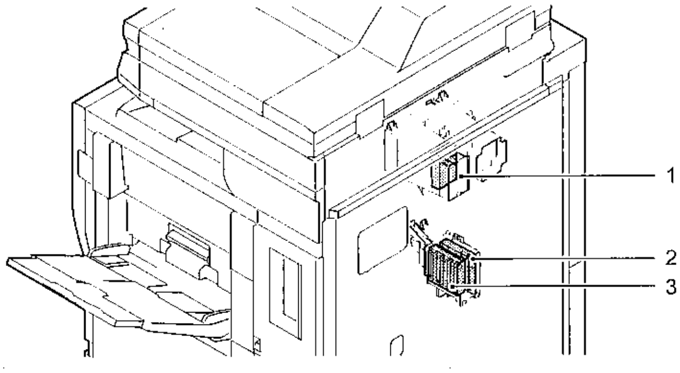
⚠: Feb. 9 2004

J. Filters

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ⊔: Shift position

			AR-M550N/U (PM: 250K) AR-M620N/U, AR-M700N/U (PM: 300K)	When calling	250K 300K	500K 600K	750K 900K	1000K 1200K	1250K 1500K	1500K 1800K	1750K 2100K	2000K 2400K	Remark
⚠	Unit name	No.	Part name										
	Filters	1	Ozone filter		▲	▲	▲	▲	▲	▲	▲	▲	
⚠		2	DV ozone filter		▲	▲	▲	▲	▲	▲	▲	▲	
⚠		3	Toner filter		▲	▲	▲	▲	▲	▲	▲	▲	

⚠



3. Maintenance and disassembly

A. Necessary execution items in maintenance and servicing

(1) Execution items before maintenance and servicing

Item	Simulation	
Check the developer counter value.	22	13
Check the OPC drum counter value.	22	13
Check the print count mode in each section and each operation mode.	22	1
Check the number of paper jam troubles.	22	2
Check the positions and contents of paper jams.	22	3
Check the positions and contents of paper jams (SPF section).	22	12
Check the contents of troubles.	22	4
Print the setting values and the adjustment values.	22	6
Check the number of use of the SPF, the scanner, the finisher, and inserter, the stapler, and the punch.	22	8
Check the number of use of each paper feed section.	22	9
Check the ROM version.	22	5

(2) Necessary execution items in maintenance and servicing

The necessary execution items in maintenance are shown below. (The items necessary to be executed are marked with "*" in the table below.)

The following items must be executed regardless of maintenance or not. (*).

(*): When repairing and inspecting (without replacement of maintenance parts), installing, cleaning each section, etc.

No.	JOB No.	Work item	Simulation	When repairing (replacing consumable parts)/maintenance					When repairing (without replacement of consumable parts)/inspecting
				When installing	When replacing the OPC drum	When replacing developer	After cleaning the scanner (read) section	Periodic maintenance	
1	—	Toner concentration reference control level setting	25-2	*		*			
2	—	The photoconductor counter is cleared.	24-7		*				
3	—	The photoconductor rotation counter is cleared.	24-11		*				
4	ADJ9	Copy image quality adjustment (check)	46-2,9,10, 11,18,31	*	*	*	*	*	
5	ADJ10	FAX mode print image quality adjustment (check)	46-12,13, 14,15,16,45	*	*	*	*	*	
6	ADJ11	Scanner mode image quality adjustment (check)	46-21,22, 23,24,25,27	*	*	*	*	*	

- The JOB No. indicates the title number of the adjustment item described in the chapter of the adjustments.
- Refer to the details based on this number according to necessity.

(3) Execution items after maintenance and servicing

Item	Simulation	
The paper jam/trouble data are cleared.	24	1
The use quantity counter of each paper feed section is cleared.	24	2
The numbers of use of the SPF, the scanner, the finisher, the inserter, the stapler, and the punch are cleared.	24	3
The maintenance counter is cleared.	24	4
The list of setting values and adjustment values is printed.	22	6

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[12] OTHER

1. VARIOUS COUNTERS SPECIFICATIONS]

A. Count specification

(1) Paper exit system counter

Counter	Count-up timing	Count-up number						Counter reset procedure, clear
		Simplex copy		Duplex copy				
		Paper feed tray – Main unit paper exit		Paper feed tray – ADU		ADU – Main unit paper exit		
		Small size	Large size	Small size	Large size	Small size	Large size	
Total counter (Note)	When transfer is completed	1	2 (1)	1	2 (1)	1	2 (1)	—
Maintenance counter	When transfer is completed	1	2 (1)	1	2 (1)	1	2 (1)	Sim24-4
Developer counter	When transfer is completed	1	2 (1)	1	2 (1)	1	2 (1)	Sim24-5
All valid paper counter (Note)	When paper exit	1	2 (1)	—	—	2	4 (2)	—
Copy counter (Copy valid paper)	When paper exit	1	2 (1)	—	—	2	4 (2)	Sim24-6
FAX counter	When paper exit	1	2 (1)	—	—	2	4 (2)	Sim24-10
Print counter	When paper exit	1	2 (1)	—	—	2	4 (2)	Sim24-9
Internet FAX counter	When paper exit	1	2 (1)	—	—	2	4 (2)	Sim24-15
Document filing counter	When paper exit	1	2 (1)	—	—	2	4 (2)	Sim24-15
Right side paper exit counter	When center paper exit	1	2 (1)	—	—	2	4 (2)	—
Other counter (Self print, etc.)	When paper exit	1	2 (1)	—	—	2	4 (2)	Sim24-9

Large size: A3, 11 x 17. (Greater size than paper length 384mm)

* ( ): Count-up number when setting to the large size single count up.

(2) Document, finishing, paper feed system counter

Counter		Mode	Count event	Count-up condition	Counter reset procedure, clear
SPF counter		All modes	SPF paper feed number	Count is made when starting SPF paper pick.	Sim24-3
Finish stamp counter		FAX send Internet FAX send	Finish stamp use number	Count is made when stamp is ON.	Sim24-3
Staple counter		All modes (Including inserter stand alone process)	Staple number	Count is made when bundle exit process is completed. Double count is made when stapling two positions. In the inserter stand alone mode, count is made when process is completed.	Sim24-3
Punch counter		All modes (Including inserter stand alone process)	Punch number	Count is made when bundle exit process is completed. 1 count regardless of the kind of the punch unit (2-hole, 3-hole, etc.) In the inserter stand alone mode, count is made when process is completed.	Sim24-3
Saddle staple counter		All modes (Including inserter stand alone process)	Saddle staple number	Count is made when bundle paper exit process is c completed. Only one count is added. In the inserter stand alone mode, count is made when process is completed.	Sim24-3
Scan total counter		All modes	Scan number	Count is made when scan is completed.	Sim24-3
ADU counter		All modes	ADU paper feed number	Count is made when paper feed from the ADU section is started.	Sim24-2
Inserter counter		All modes (Including inserter offline process)	Inserter tray paper feed number	Count is made when paper feed from the inserter tray is started. In the inserter stand alone mode, count is made when process is completed.	Sim24-3
Paper feed counter	Manual paper feed tray	All modes	Tray paper feed number	Count is made when paper feed from each tray is started.	Sim24-2
	Paper feed tray 1				Sim24-2
	Paper feed tray 2				Sim24-2
	Paper feed tray 3				Sim24-2
	Paper feed tray 4				Sim24-2
	LCC				Sim24-2

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(3) Send system counter

Counter	Mode	Count event	Count-up condition	Counter reset procedure, clear
Accumulated number of FAX send	G3 FAX send	Number of send	Except for the serial transmit operation, one reservation is counted as one communication. For the serial transmit operation, count is made for each communication individually. Recall is not included. Polling is counted as a number of send.	Sim24-10
Accumulated page number of FAX send	G3 FAX send	Total page number of send	In the serial transmit operation, each communication is counted as one individually. In bulletin board send, the page number of send is counted.	Sim24-10
Accumulated time of FAX send	G3 FAX send	Send time (Including resending time.)		Sim24-10
Accumulated page number of scanner scan	Scan to E-mail send SHARP DESK send FTP send	Page number of scan	Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) In case of a send error (excluding document jam) • E-mail → Not counted. • SHARP DESK/FTP → Counted.	Sim24-15
Accumulated number of mail send	Scan to E-mail send	Number of mails reached to destination servers	Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) Cancel and network error are not counted.	Sim24-15
Accumulated number of FTP send	SHARP DESK send FTP send	Number of send reached to destination servers	Mails transmitted by FTP send are counted in the accumulated number of mail send. Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) Cancel and network error are also counted.	Sim24-15
Accumulated number of internet FAX send	Internet FAX send	Page number of send	Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) The final send result is counted. A send error is counted. Resend is not counted. Cancel and CE error are not counted.	Sim24-15
Accumulated number of internet FAX receive	Internet FAX send	Page number of scan	Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) The final send result is counted. A communication error (except for document jam) is counted. Cancel and CE error are not counted. A send (transfer, F code relay broadcast) without document scan is not counted.	Sim24-15
Scanner trial counter	Internet FAX send Scan to E-mail send SHARP DESK send FTP send	Page number of scan	Count is made for every scan of page. Count is made even when send is not completed. The operation is terminated when the count number exceeds 500.	—
Page number of Scan to HDD	When reading SCAN TO HDD	HDD storage page number		Sim24-15

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(4) Receive system counter

Counter	Mode	Count event	Count-up condition	Counter reset procedure, clear
The accumulated page number of FAX receive print	G3 FAX receive	Total output page number	The FAX separator sheet is also counted. When polling, the number of received pages is counted. Count by size and count in recovery are the same as the copier specifications. (Counted by the print system.)	Sim24-10
Accumulated time of FAX receive	G3 FAX receive	Receive time		Sim24-10
Accumulated number of internet FAX receive	Internet FAX receive	Receive number	A normal mail receive is also counted. Count is made regardless of normal or abnormal. Count is made regardless of print result.	Sim24-15
Accumulated page number of internet FAX receive print	Internet FAX receive	Total receive output number	Count is made when output is made on a normal mail receive. Print of mail text is not counted. The FAX separator sheet is also counted. Count by size and count in recovery are the same as the copier specifications. (Counted by the print system.)	Sim24-15

(5) Department counter

Operation content	Data location				Conforming count mode (SIM 26-5)			Count-up condition
	MFP Control PWB	FAX	Scanner control PWB	PCU PWB	TOTAL	Mainte-nance	DV	
Copy counter	●				■			
Print counter	●				■			
FAX send page number counter	●				■			Department FAX send page number • In the serial transmit operation, each communication is counted as one individually.
Network scanner counter	●				—	—	—	Department network scanner scan page number • iFAX and network scanner • Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.)
I-FAX send page number counter	●				■			Department FAX send page number • In the serial transmit operation, each communication is counted as one individually.
Document filing	●				■			

(6) Printer job count-up specification

	Total use page number counter		Department counter		
	PRINTS	OTHERS	Key operation number	Driver specification account number	Other department (OTHERS)
Printer job (Without account administration)	○	—	—	—	—
Printer job (With account specification) *	○	—	—	○	—
Printer job (Without account specification) *	○	—	—	—	○
Notice in printer job (Without account administration)	○	—	—	—	—
Notice in printer job (With account specification) *	○	—	—	—	○
Notice in printer job (Without account specification) *	○	—	—	—	○
List print	—	○	—	—	—
Total use page number print	—	○	—	—	—
Each department total page number print	—	○	—	—	—
Engine self print	—	—	—	—	—

* When there is "NO" in account administration, or when there is not "NO."

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(7) Total counter specifications

The total count viewed from the user and the counter used for charging are "Total output counter (total valid paper counter)."

	Total output counter (Total valid paper counter)	Total counter
Display when the copy key is ON.	■	—
List print	■	—
Valid paper counter to send to serial RIC	■	—
⚠ Total counter to send to serial RIC	■	—
E-RIC mail text counter	■	—
E-RIC attached file	■ (Counter for the first send)	■ (Counter to send in the midst of packet)
SIMULATION	Displayed/printed as Total output.	Displayed/printed as Total

(8) Blank paper count specification

Mode	Print mode	Count attribute		Blank paper count setting (SIM 26-52)				Remark
		Print surface		0: NO		1: YES		
		Front surface	Back surface	Small size	Large size	Small size	Large size	
Normal	Without print (Invalid paper exit)	×	—	0	0	0	0	
	Without print (Blank paper insertion)	△	—	0	0	1	2 (1) *1	
	Single face print (Single face mode)	○	—	1	2 (1) *1	1	2 (1) *1	SS/DS
	Single face print (Duplex mode)	○	×	1	2 (1) *1	1	2 (1) *1	SD (Odd number of documents)
	Duplex print	○	○	2	4 (2) *1	2	4 (2) *1	SD (Even number of documents)/ DD
Front cover	Without print	△	—	0	0	1	2 (1) *1	
	With print (Single face)	○	—	1	2 (1) *1	1	2 (1) *1	
	With print (Duplex)	○	○	2	4 (2) *1	2	4 (2) *1	
Back cover	Without print	×	△	0	0	1	2 (1) *1	
	With print (Single face)	×	○	1	2 (1) *1	1	2 (1) *1	
	With print (Duplex)	○	○	2	4 (2) *1	2	4 (2) *1	
Insert paper	Without print	△	—	0	0	1	2 (1) *1	
	With print (Single face)	○	—	1	2 (1) *1	1	2 (1) *1	
	With print (Duplex)	○	○	2	4 (2) *1	2	4 (2) *1	
OHP insert paper	Without print	△	—	0	0	1	2 (1) *1	
	With print (Single face)	○	—	1	2 (1) *1	1	2 (1) *1	
	With print (Duplex)	—	—	—	—	—	—	Duplex print inhibition

* Large size: A3, 11 x 17. (Greater size than paper length 384mm)

*1: Follows SIM 26-5 (Count-up mode). (Default: Double count-up (Set value: 2))

( ): Large size single count-up setting (Count-up number when set to 1.)

○: Counts up.

×: Does not count up.

△: Follows SIM 26-52 setting.

0: Does not count up. (Japan/SCA default) 1: Counts up. (Other default)

—: Out of target (No print process)

(9) Consumables counter specification

Counter	Count-up timing	Count-up number						Counter reset procedure, clear
		Simplex print		Duplex print				
		Paper feed tray – Main unit paper exit		Paper feed tray – ADU		ADU – Main unit paper exit		
		Small size	Large size	Small size	Large size	Small size	Large size	
OPC drum counter	When transfer is completed	1	2 (1)	1	2 (1)	1	2 (1)	Sim24-7
OPC drum rotation counter (sec)	When transfer is completed	—	—	—	—	—	—	Sim24-11
Developer counter	When transfer is completed	1	2 (1)	1	2 (1)	1	2 (1)	Sim24-5
Developing roller rotation counter (sec)	When transfer is completed	—	—	—	—	—	—	Sim24-11
Toner counter	When transfer is completed	1	2 (1)	1	2 (1)	1	2 (1)	—
Toner supply counter (sec)	When transfer is completed	—	—	—	—	—	—	—

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(10)Reset and set for suplly counters

Work item	Test Command	Reset item	Included Test Command
Setting the toner concentration control level	Sim25-2	Developer counter	Sim24-5
		DV unit running time counter (sec)	Sim24-11
Reset the OPC drum counter	Sim24-7	OPC drum counter	—
Reset the Developer counter	Sim24-5	Developer counter	—
Reset the OPC drum running time counter (sec)	Sim24-11	OPC drum running time counter (sec)	—
Reset the DV running time counter (sec)	Sim24-11	DV running time counter (sec)	—

B. Location and display of each counter data

Simulation Code		Operation content	Data size	Data location				Conforming count mode (SIM 26-5)			Count-up condition
Main	Sub			MFP control PWB	FAX	Scanner control PWB	PCU PWB	TOTAL	Mainte-nance	DV	
22	01	Each counter display (Total/ Maintenance/ Developer/ SPF/ Staple/ Tray)									
		1: Total counter					●	■			
▲1		2: Drum cartridge counter					●			■	
		3: Toner cartridge counter					●			■	
		4: Deve cartridge counter					●			■	
		5: Maintenance counter					●		■		
		6: Total output page number counter					●	■			
		7: Copy counter		●				■			
		8: Printer counter		●				■			
		9: FAX output counter		●				■			
		10: I-FAX output counter		●				■			
		11: Document filing output counter		●				■			
		12: Right side output counter					●	■			Count is made when the main unit paper exit is started. (When POP2 is ON)
		13: Other print counter		●				■			Refer to the "Count Specifications."
	02	Jam/ Trouble counter display									
		1: Paper jam		●				—	—	—	Count is made when an event occurs. (A jam by closing the door during paper transport is not counted.)
		2: SPF jam		●				—	—	—	Count is made when an event occurs. (A jam by closing the door during paper transport is not counted.)
		3: Trouble		●				—	—	—	Count is made when an event occurs. (Follows the trouble count method of SIM 26-35.)
	08	Document, staple counter display									
		1: SPF document feed page number				●		—	—	—	One count is made every time when SPF document is paper feed.
		2: Scan number				●		—	—	—	One count is made every time when scan is completed.
		3: Staple number					●	—	—	—	One count for every stapling (Stapling at two positions is counted as 2.)
		4: Punch number					●	—	—	—	One count for every punching
		5: SPF finish stamp number				●		—	—	—	One count when stamp is started.
		6: Saddle staple number					●				One count for every saddle stapling
		7: Inserter number					●				One count for every paper pick-up
	09	Paper feed counter display									
		1: Paper feed tray 1 (Tandem Left)					●	—	—	—	One count for every paper pick-up
		2: Paper feed tray 2 (Tandem Right)					●	—	—	—	One count for every paper pick-up
		3: Paper feed tray 3					●	—	—	—	One count for every paper pick-up
		4: Paper feed tray 4					●	—	—	—	One count for every paper pick-up
		5: MFT (Manual paper feed tray)					●	—	—	—	One count for every paper pick-up
		6: ADU					●	—	—	—	One count for every paper transport start from ADU.
		7: LCC					●				One count for every paper pick-up
	11	FAX send/receive counter display									
		1: FAX send (Send counter)	32bit	●				—	—	—	Accumulated page number of send • Except for the serial transmit operation, one reservation is counted as one communication. • For the serial transmit operation, count is made for each communication individually. • Recall is not included. • Saved in the FAX-SRAM.
		2: FAX receive (Receive counter)	32bit	●				—	—	—	Accumulated number • Count is made regardless of normal or abnormal completion. • Saved in the 32bit counter and the FAX-SRAM.
		3: FAX output (FAX print counter)	32bit	●				■			The accumulated page number of FAX receive print Count by size and count in recovery are the same as the copier specifications. • Counted by the print system. Refer to the "Count Specifications."
		4: FAX send images (Send page number)	32bit	●				—	—	—	Accumulated page number of send • In the serial transmit operation, each communication is counted as one individually. • Saved in the 32bit counter and the FAX-SRAM.
		5: Send time (Send time)	48bit	●				—	—	—	hhhhhhhh:mm:ss Saved in the FAX-SRAM.
		6: Receive time (Receive time)	48bit	●				—	—	—	hhhhhhhh:mm:ss Saved in the FAX-SRAM.

Simulation Code		Operation content	Data size	Data location				Conforming count mode (SIM 26-5)			Count-up condition
Main	Sub			MFP control PWB	FAX	Scanner control PWB	PCU PWB	TOTAL	Mainte-nance	DV	
22	13	Process section count data display									
		△1 1: Drum counter					●			■	Refer to the "Count Specifications." (Same as the maintenance counter.)
		2: Drum rotating time					●	—	—	—	Count for every second of rotation
		△1 3: Toner counter					●			■	Refer to the "Count Specifications." (Same as the developer counter.)
		4: Toner supply time					●	—	—	—	Count for every second of rotation
		△1 5: Developer counter					●			■	Refer to the "Count Specifications." (Same as the developer counter.)
		6: Developer rotating time					●	—	—	—	Count for every second of rotation
	19	Display of counters related to the network scanner									
		1: Network scanner document scan page number counter	32bit	●				—	—	—	Accumulated page number of scanner scan • The page number of normal completion of iFAX, E-mail, and FTP (DESK) send. • In sequential broadcast, count is made when one destination send is normally completed. • In case of a communication error: (Except for document jam) For iFAX and E-mail, send is canceled and no page is sent. Therefore count is not made. For FTP (DESK), though send is canceled, data reached in the server remains, and only the page number of send is counted. • Saved in the FAX-SRAM.
		2: Mail send counter	32bit	●				—	—	—	Accumulated number of mail send • The number of send mails of iFAX, E-mail, and FTP is counted. • Even in the serial system, one scan is counted. (The number of receivers is not counted.) • The number of mails reached to the server is counted. • Since server data are deleted in case of send cancel or a network error, count is not made. • Saved in the FAX-SRAM.
		3: FTP send counter	32bit	●				—	—	—	Accumulated number of FTP send • The page number of FTP (DESK) send is counted. • The FTP send mails are counted by the MAIL send counter. • Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) • The number of mails reached to the server is counted. • In case of send cancel or a network error, the server data cannot be deleted. Therefore, count is made. • Saved in the FAX-SRAM.
		4: I-FAX original (Scan page number counter)	32bit	●				—	—	—	Accumulated page number of internet FAX scan • A communication error (except for document jam) is counted. • Cancel and CE error are not counted. • A send (transfer, F code relay broadcast) without document scan is not counted. • Saved in the FAX-SRAM.
		5: I-FAX send (Send counter)	32bit	●				—	—	—	Accumulated number of internet FAX send • A send error is counted. • Resend is not counted. • Cancel and CE error are not counted. • Saved in the 32bit counter and the FAX-SRAM.
		6: I-FAX receive (Receive counter)	32bit	●				■			Accumulated number of internet FAX send • A normal mail receive is also counted. • Saved in the 32bit counter and the FAX-SRAM.
		7: I-FAX output (Print page number counter)	32bit	●				—	—	—	Accumulated page number of internet FAX receive print Count by size and count in reprint after a jam are the same as the copier specifications.
		8: SCAN TO HDD (Save page number counter)	32bit	●				—	—	—	Page number of SCAN TO HDD save • The page number of documents saved to HDD is counted.

2. Web setting service mode

A. Outline

The Web setting service mode provides the following functions:

- Font/Form Download
- Device Cloning

These functions are used to backup the user data and the key operator program setting data, and to import backup data to another machine. By using these functions, two or more machines can be set in the same conditions in a short time.

- i-Fax Setup

This function is used to backup i-Fax receive data to the FTP server.

By using this function, receive data are backed up to the FTP server when they cannot be printed by some reasons (paper empty, toner empty, paper jam, etc.) and can be printed out after recovery of the machine.

After completion of printing the backup data, they are deleted from the FTP server.

B. Operating procedures

Entering the Web setting mode

1) Boot the browser software.
2) Enter "xxx.xxx.xxx.xxx(IP address)/xxxx_xxxxx.html" and press ENTER key.
3) Enter the user name and the password, and press OK button.

Note: The default user name and the default password are as follows:

User name: service
Password: shArp

The password can be optionally changed in the following procedures:

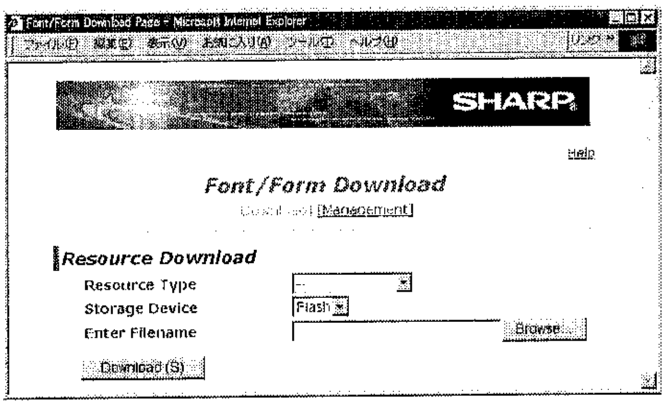
1) Enter "xxx.xxx.xxx.xxx(IP address)/password_setting.html" and press ENTER key.
2) Enter a new password.
3) Enter the new password again in the check column.
4) Press SUBMIT button.

C. Details

(1) Font / Form Download

(Font download)

1) Press "xxx.xxx.xxx.xxx(IP address)/font_down.html" and press ENTER key.
2) Enter the user name and the password, and press OK button.

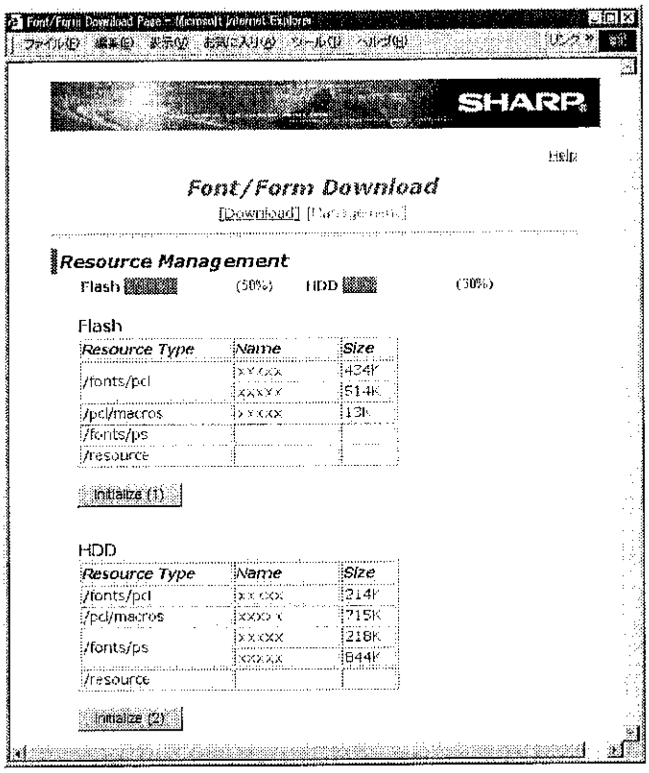

Font/Form Download Page - Microsoft Internet Explorer
ファイル(F) 編集(E) 表示(V) お気に入り(A) ツール(T) ヘルプ(H)
リンク »
SHARP
Help
Font/Form Download
[Download] [Management]
Resource Download
Browse...
Download (S)

Resource Type --
Storage Device Flash
Enter Filename

3) Select "Download" menu.
4) Select Resourced type.
5) Select Storage Device.
6) Select Font file.
7) Press "Download" button.

(Check or delete of downloaded font)

1) Press "xxx.xxx.xxx.xxx(IP address)/font_down.html" and press ENTER key.
2) Enter the user name and the password, and press OK button.
3) Select Management menu.


Font/Form Download Page - Microsoft Internet Explorer
ファイル(F) 編集(E) 表示(V) お気に入り(A) ツール(T) ヘルプ(H)
リンク »
SHARP
Help
Font/Form Download
[Download] [Management]
Resource Management
Initialize (1)
Initialize (2)

Flash (50%) HDD (30%)

Flash

Resource Type	Name	Size
/fonts/pcl	xxxxx	434K
	xxxxx	514K
/pcl/macros	xxxxx	13K
/fonts/ps		
/resource		

HDD

Resource Type	Name	Size
/fonts/pcl	xxxxx	214K
/pcl/macros	xxxxx	715K
/fonts/ps	xxxxx	218K
	xxxxx	844K
/resource		

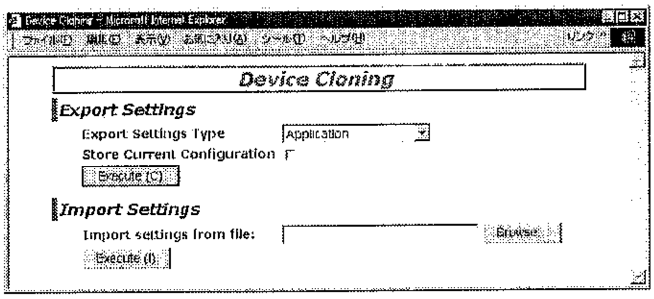
The list of downloaded fonts and the used percentage of the font area in the memory device are displayed.

Press "Initialize" button and press Yes key, and the downloaded fonts will be deleted.

(2) Device Cloning

(Backup)

1) Press "xxx.xxx.xxx.xxx(IP address)/device_cloning.html" and press ENTER key.
2) Enter the user name and the password, and press OK button.


Device Cloning - Microsoft Internet Explorer
ファイル(F) 編集(E) 表示(V) お気に入り(A) ツール(T) ヘルプ(H)
リンク »
Device Cloning
Export Settings
Execute (C)
Import Settings
Browse...
Execute (I)

Export Settings Type Application
Store Current Configuration ☐
Import settings from file:

3) Select an item to be backed up. (Application / Key operator setting)
4) Press Execute key.
5) Press Save button. (File download mode)
6) Select the destination of save.
7) Press Save button.

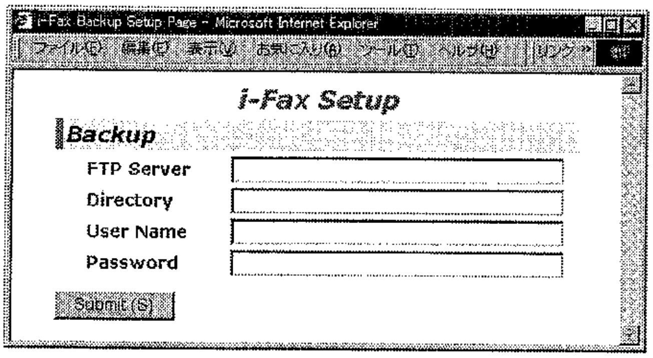
(Import)

1) Press "xxx.xxx.xxx.xxx(IP address)/device_cloning.html" and press ENTER key.
2) Enter the user name and the password, and press OK button.
3) Select the backed up file (xxxx.bin).
4) Press Execute key.

   The backed up data (setup data) are written into the machine.

(3) i-Fax Setup

1) Press "xxx.xxx.xxx.xxx(IP address)/ifax_ftp.html" and press ENTER key.
2) Enter the user name and the password, and press OK button.


i-Fax Backup Setup Page - Microsoft Internet Explorer
ファイル(F) 編集(E) 表示(V) お気に入り(A) ツール(T) ヘルプ(H) リンク
i-Fax Setup
Backup
FTP Server
Directory
User Name
Password
Submit (S)

3) Enter the FTP server address to which i-Fax receive data are backed up.
4) Enter the directory.
5) Enter the user name
6) Enter the password.
7) Press Submit button.

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3. Paper jam code

A. Paper jam judgment conditions

JAM code	Content	JAM detection method		JAM judge time (JAMTST - JAMJD)	
		JAM detection timer start trigger (JAMTST)	JAM judge dedtector (JAMJD)	55/62 PPM MODEL (335mm/s)	70 PPM MODEL (395mm/s)
TRAY1	Tray 1 paper feed jam (PFD2 not-reached)	T1PFC ON	PFD2 ON	1608ms	1516ms
⚠					
PFD2_NM1	PFD2 not-reached jam (Tray 3 feed paper)	VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 13, VPM turns ON.)	PFD2_NM1	541ms	480ms
PFD2_NM2	PFD2 not-reached jam (Tray 4 feed paper)	VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 13, VPM turns ON.)	PFD2_NM2	541ms	480ms
PFD2_NAD	PFD2 not-reached jam (ADU re-feed paper)	APPD2 ON	PFD2_NAD	819ms	710ms
PPD_NMF	PPD1 not-reached jam (Manual feed tray feed paper)	MPRD2 ON	PPD ON	429ms	364ms
⚠ PPD_NT1	PPD1 not-reached jam (Tray 1 feed paper)	PFD2 ON	PPD ON	352ms	298ms
PPD_NT2	PPD1 not-reached jam (Tray 2 feed paper)	MPRD2 ON	PPD ON	429ms	364ms
PPD_NM1	PPD1 not-reached jam (Tray 3 feed paper)	PFD2 ON	PPD ON	352ms	298ms
PPD_NM2	PPD1 not-reached jam (Tray 4 feed paper)	PFD2 ON	PPD ON	352ms	298ms
PPD_NLC	PPD1 not-reached jam (LCC paper feed paper)	MPRD2 ON	PPD ON	429ms	364ms
PPD_NAD	PPD1 not-reached jam (ADU re-feed paper)	PFD2 ON	PPD ON	352ms	298ms
POD1_N	POD1 not-reached jam	RRC ON	POD1 ON	943ms	800ms
POD2_N	POD2 not-reached jam	POD1 ON	POD2 ON	429ms	364ms
AINPD_N (Saddle)	ADU paper entry sensor not-reached jam	DGS ON (When the paper lead edge is transported to 30mm apart from the switchback operation start position.)	AINPD ON (Saddle)	435ms	435ms
AINPD_N (Other)	ADU paper entry sensor not-reached jam	DGS ON (When the paper lead edge is transported to 30mm apart from the switchback operation start position.)	AINPD ON (Other)	318ms	318ms
APPD1_N	ADU transport sensor 1 not-reached jam	AINPD ON	APPD1ON	292ms	292ms
APPD2_N	ADU transport sensor 2 not-reached jam	APPD1 ON + 90mm	APPD2 ON	375ms	375ms
⚠ DESK1	Tray 3 paper feed jam (M1PFD not-reached)	M1PFC ON	M1PFD ON	1531ms	1450ms
DESK2	Tray 4 paper feed jam (M2PFD not-reached)	M2PFC ON	M2PFD ON	1531ms	1450ms
M1PFD_N2	M1PFD not-reached jam (Tray 4 feed paper)	M2PFD ON	M1PFD ON	513ms	435ms
MPRD2_N2	MPRD2 not-reached jam (Tray 2 feed paper)	VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 4, VPM turns ON.)	MPRD2 ON	467ms	417ms
MPRD2_NM	MPRD2 not reached jam (Manual paper feed tray feed paper)	VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 4, VPM turns ON.)	MPRD2 ON	467ms	417ms

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JAM code	Content	JAM detection method		JAM judge time (JAMTST - JAMJD)	
		JAM detection timer start trigger (JAMTST)	JAM judge dedtector (JAMJD)	55/62 PPM MODEL (335mm/s)	70 PPM MODEL (395mm/s)
MPRD2_NL	MPRD2 not-reached jam (LCC paper feed paper)	VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 4, VPM turns ON.)	MPRD2 ON	467ms	417ms
▲ TRAY2	Tray 2 paper feed jam (MPRD1 not-reached)	T2PFC ON	MPRD1 ON	1519ms	1440ms
MPRD1_NM	MPRD1 not-reached jam (Manual paper feed tray feed paper)	MPFD2 ON	MPRD1 ON	564ms	478ms
MPRD1_NL	MPRD1 not-reached jam (LCC paper feed paper)	MPFD2 ON	MPRD1 ON	564ms	478ms
MPFD2_NM	MPFD2 not-reached jam (Manual paper feed tray feed paper)	MPFD1 ON	MPFD2 ON	570ms	483ms
MPFD2_NL	MPFD2 not-reached jam (LCC paper feed paper)	LPPD ON	MPFD2 ON	677ms	574ms
▲					
BPT	Manual tray feed jam (MPFD1 not-reached)	MPFC ON	MPFD1 ON	1367ms	1311ms
LPPD_N	LPPD not-reached jam	LTD ON(LCC)	LPPD ON	1447ms	1379ms
▲ PFD2_ST1	PFD2 remaining jam (Tray 1 feed paper)	RRC ON	PFD2 OFF (PFD2 paper rear edge detection) + 65mm	PFD2 OFF (PFD2 paper rear edge detection) + 65mm	
PFD2_SM1	PFD2 remaining jam (Tray 3 feed paper)	M1PFD OFF (When paper is transported by 50mm from M1PFD paper rear edge detection.)	PFD2 OFF	671ms	569ms
PFD2_SM2	PFD2 remaining jam (Tray 4 feed paper)	M1PFD OFF (When paper is transported by 50mm from M1PFD paper rear edge detection.)	PFD2 OFF	671ms	569ms
PFD2_SAD	PFD2 remaining jam (ADU re-feed paper)	RRC ON	PFD2 OFF (PFD2 paper rear edge detection) + 65mm	PFD2 OFF (PFD2 paper rear edge detection) + 65mm	
▲ PPD_ST1	PPD1 remaining jam (Tray 1 feed paper)	PFD2 OFF	PPD OFF	352ms	298ms
PPD_ST2	PPD1 remaining jam (Tray 2 feed paper)	MPRD2 OFF	PPD OFF	429ms	364ms
PPD_SM1	PPD1 remaining jam (Tray 3 feed paper)	PFD2 OFF	PPD OFF	352ms	298ms
PPD_SM2	PPD1 remaining jam (Tray 4 feed paper)	PFD2 OFF	PPD OFF	352ms	298ms
PPD_SLC	PPD1 remaining jam (LCC paper feed paper)	MPRD2 OFF	PPD OFF	429ms	364ms
PPD_SAD	PPD1 remaining jam (ADU re-feed paper)	PFD2 OFF	PPD OFF	352ms	298ms
PPD_SMF	PPD1 remaining jam (Manual feed tray feed paper)	MPRD2 OFF	PPD OFF	429ms	364ms
POD1_S (Right paper exit, infinite form)	POD1 remaining jam	PPD OFF	POD1 OFF	1128ms	956ms
POD1_S (Left paper exit)	POD1 remaining jam	PPD OFF	POD1 OFF	1128ms	956ms
POD2_SR	POD2 remaining jam (When paper is discharged on the right side of the machine.)	POD1 OFF	POD2 OFF	429ms	364ms
POD2_SL	POD2 remaining jam (When paper is discharged on the left side of the machine.)	POM1 ON (Switchback start)	POD2 OFF	Paper length + 115mm	
AINPD_S (Saddle paper exit)	ADU paper entry sensor remaining jam	POD2 OFF	AINPD OFF	187ms	187ms

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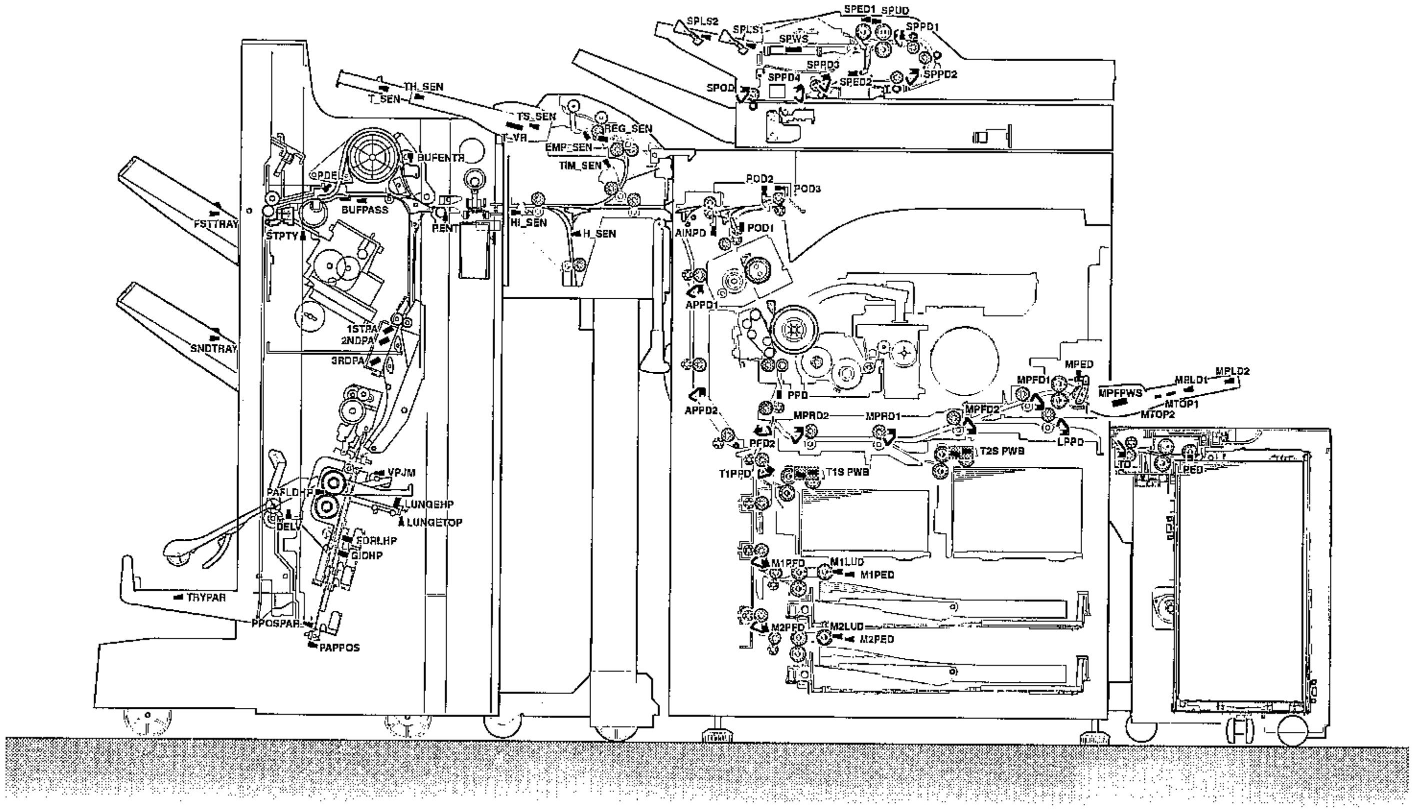
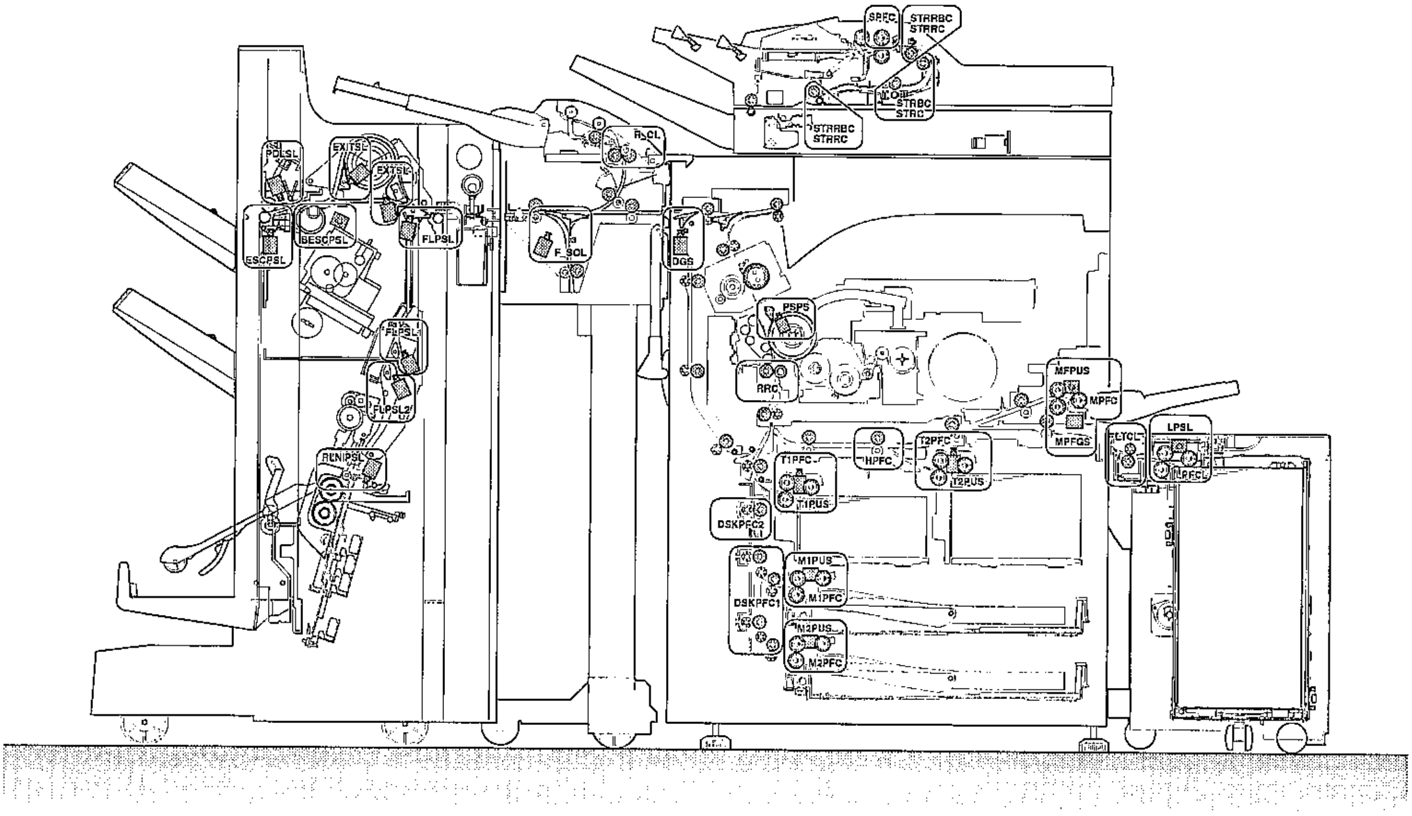
JAM code	Content	JAM detection method		JAM judge time (JAMTST - JAMJD)	
		JAM detection timer start trigger (JAMTST)	JAM judge dedtector (JAMJD)	55/62 PPM MODEL (335mm/s)	70 PPM MODEL (395mm/s)
AINPD_S (Other)	ADU paper entry sensor remaining jam	POD2 OFF	AINPD OFF	187ms	187ms
APPD1_S	ADU transport sensor 1 remaining jam	AINPD OFF	APPD1 OFF	292ms	292ms
APPD2_S	ADU transport sensor 2 remaining jam	LD ON	APPD2 OFF(APPD2 paper rear edge detection) + 65mm	APPD2 OFF(APPD2 paper rear edge detection) + 65mm	
⚠ M1PFD_S1	M1PFD remaining jam (Tray 3 feed paper)	M1PFD ON	M1PFD OFF	Paper length + 65mm	
M1PFD_S2	M1PFD remaining jam (Tray 4 feed paper)	M2PFD OFF	M1PFD OFF	513ms	435ms
M2PFD_S	M2PFD remaining jam	M2PFD ON	M2PFD OFF	Paper length + 65mm	
⚠ MPRD2_S2	MPRD2 remaining jam (Tray 2 feed paper)	MPRD1 OFF	MPRD2 OFF	653ms	554ms
MPRD2_SM	MPRD2 remaining jam (Manual paper feed tray feed paper)	MPRD1 OFF	MPRD2 OFF	653ms	554ms
MPRD2_SL	MPRD2 remaining jam (LCC paper feed paper)	MPRD1 OFF	MPRD2 OFF	653ms	554ms
⚠ MPRD1_S2	MPRD1 remaining jam (Tray 2 feed paper)	MPRD1 ON	MPRD1 OFF	Paper length + 65mm	
MPRD1_SM	MPRD1 remaining jam (Manual paper feed tray feed paper)	MPFD2 OFF	MPRD1 OFF	564ms	478ms
MPRD1_SL	MPRD1 remaining jam (LCC paper feed paper)	MPFD2 OFF	MPRD1 OFF	564ms	478ms
MPFD2_SM	MPFD2 remaining jam (Manual paper feed tray feed paper)	MPFD1 OFF	MPFD2 OFF	570ms	483ms
MPFD2_SL	MPFD2 remaining jam (LCC paper feed paper)	LPPD OFF	MPFD2 OFF	1447ms	1379ms
MPFD1_S	MPFD1 remaining jam	MPFD1 ON	MPFD1 OFF	Paper length + 65mm	
LPPD_S	LPPD remaining jam	LTD OFF (LCC paper feed complete)	LPPD ON	1447ms	1379ms
PPD_PRI	PPD1 jam (Image ready request is not sent from ICU.)	Image data send ready request command is sent (PCU to MFP CONTROL)	Image data send ready status is sent. (MFP CONTROL to PCU)	30000ms	30000ms
LPPD_LCC	LPPD jam (No reply in a certain time after preliminary paper feed from LCC and issuing the paper feed command.)	Preliminary paper feed request command is sent. (PCU to LCC)	Preliminary paper feed start status is sent. (LCC to PCU)	70sec	70sec

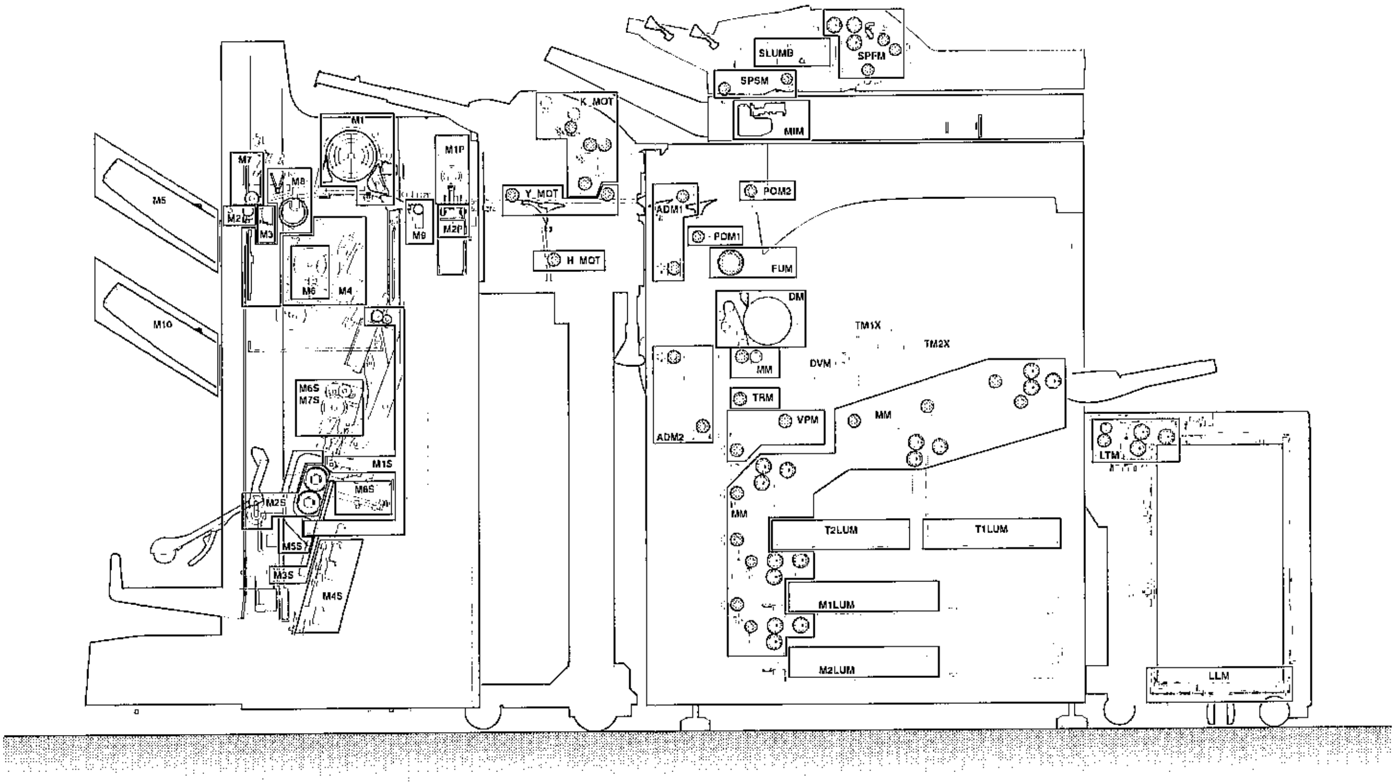
Sensor cross section


SPLS2
SPLS1
SPWS
SPED1
SPUD
SPPD1
SPPD3
SPPD4
SPED2
SPPD2
SPOD
TH_SEN
T_SEN
TS_SEN
T_VR
REG_SEN
EMP_SEN
TIM_SEN
BUFENTR
PDEL
BUFPASS
PENT
HI_SEN
H_SEN
FSTTRAY
STPTY
SNDTRAY
1STPA
2NDPA
3RDPA
VPJM
PAFLDHP
LUNGEHP
LUNGETOP
DELV
FDRLHP
GIDHP
TRYPAR
PPOSPAR
PAPPOS
POD2
POD3
AINPD
POD1
APPD1
APPD2
PPD
MPED
MPFD1
MPLD2
MPLD1
MPFPWS
MTOP1
MTOP2
MPRD2
MPRD1
MPFD2
LPPD
PFD2
T2S PWB
T1PPD
T1S PWB
LTD
LPED
M1PFD
M1LUD
M1PED
M2PFD
M2LUD
M2PED

Clutch/solenoid cross section


SPFC
STRRBC
STRRC
STRBC
STRC
STRRBC
STRRC
POLSL
EXITSL
EXTSL
ESCPSL
BESCPSL
FLPSL
RSCL
F_SOL
DGS
FLPSL1
FLPSL2
RLNIPSL
PSPS
RRC
MFPUS
MPFC
MPFGS
LTCL
LPSL
LPFCL
T1PFC
T1PUS
HPFC
T2PFC
T2PUS
DSKPFC2
DSKPFC1
M1PUS
M1PFC
M2PUS
M2PFC

Motor cross section



B. Inserter (AR-CF2) paper jam judgment conditions

JAM CODE	Name	JAM detection method		JAM judge distance
		JAM detection start trigger	JAM judge detector	
REG_SEN_N	Resist sensor not-reached JAM	Separation start	Resist sensor ON	(Distance from pick descending start to resist sensor ON) x 5
REG_SEN_S	Resist sensor remaining JAM	Transport start from the take-up position (*1)	Resist sensor OFF	Max. document length (WLT) - (Resist sensor OFF to take-up position) + 200mm
TIM_SEN_N	Timing sensor not-reached JAM	Resist sensor ON	Timing sensor ON	Distance from resist sensor ON to timing sensor ON + 200mm
TIM_SEN_S	Timing sensor remaining JAM	Resist sensor OFF	Timing sensor OFF	Distance from resist sensor OFF to timing sensor OFF + 200mm
HI_SEN_NI	Paper exit sensor not-reached JAM (Inserter paper feed)	Timing sensor ON	Paper exit sensor ON	Distance from timing sensor ON to paper exit sensor ON + 200mm
HI_SEN_NP	Paper exit sensor not-reached JAM (Main unit paper feed)	Main unit paper exit command receive	Paper exit sensor ON	Distance from main unit side to paper exit sensor ON + 500mm
HI_SEN_S	Paper exit sensor remaining JAM (Main unit paper feed)	After passing by 20mm from the paper exit sensor ON	Paper exit sensor OFF	Max. document length (WLT) + 200mm
	Paper exit sensor remaining JAM (Inserter paper feed)	Timing sensor OFF	Paper exit sensor OFF	Distance from timing sensor OFF to paper exit sensor OFF + 200mm
H_SEN_NIN	Reverse sensor not-reached JAM (When entering the reverse path)	Timing sensor ON	Reverse sensor ON	Distance from timing sensor ON to reverse sensor ON + 100mm
H_SEN_NOUT	Reverse sensor not-reached JAM (When exiting from the reverse path)	Switchback start	Reverse sensor ON	Distance from reverse stop position (*2) to reverse sensor ON + 100mm
H_SEN_SIN	Reverse sensor remaining JAM (When entering the reverse path)	Timing sensor OFF	Reverse sensor OFF	Distance from timing sensor OFF to reverse sensor OFF + 100mm
H_SEN_SOUT	Reverse sensor remaining JAM (When exiting from the reverse path)	After passing 20mm from the reverse sensor ON	Reverse sensor OFF	Max. Document length (WLT) + 100mm

*1) The take-up position is 30mm downstream from the vertical path transport roller.

*2) The reverse stop position is 20mm downstream from the reverse sensor.

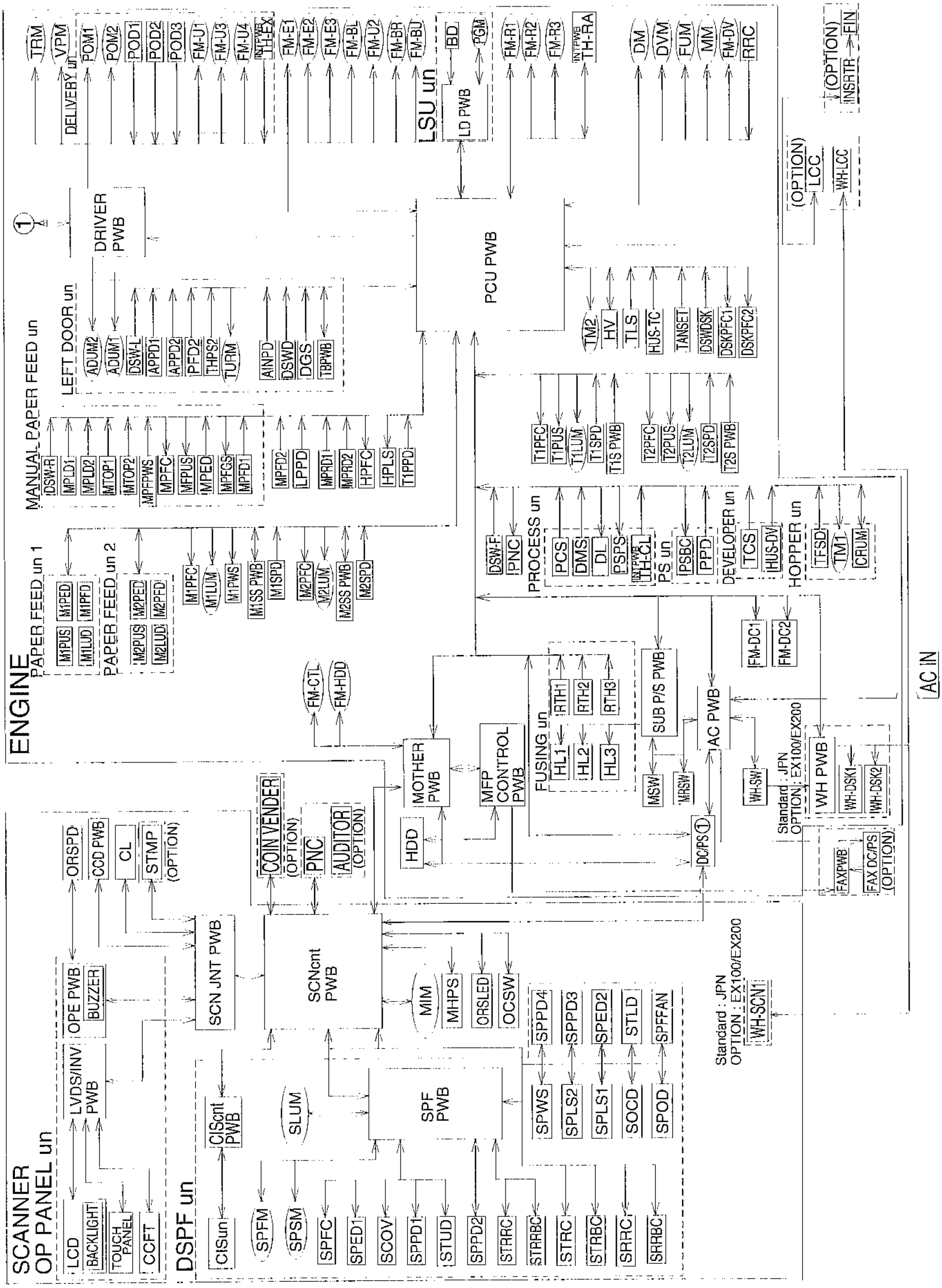
C. Finisher (AR-F15/F16) paper jam judgment conditions

JAM code	Content	JAM detection method		JAM judgment time (Stacker: LTR horizontal size Saddle: LTR vertical size)
		JAM detection timer start trigger	JAM judge detector	Common to 55/62, 70PPM MODELS (Main unit paper exit speed: Stacker: 800mm/s Saddle: 420mm/s)
FES_N	FINISHER entry port sensor not-reached JAM	Main unit paper exit command reception	The paper entry sensor is not turned ON within the specified time.	500ms
FES_S	FINISHER entry port remaining JAM	Paper entry sensor ON	The paper entry sensor is not turned OFF within the specified time.	540ms
	FINISHER buffer sensor not-reached JAM	Paper entry senor ON	The buffer sensor is not turned ON within the specified time.	688ms
	FINISHER buffer sensor remaining JAM	Buffer sensor ON	The buffer sensor is not turned OFF within the specified time.	540ms
	FINISHER paper exit sensor not-reached JAM	Entry port sensor ON	The paper exit sensor is not turned ON within the specified time.	Straight path transport: 453ms Buffer path transport: 815ms
	FINISHER paper exit sensor remaining JAM	Paper exit sensor ON	The paper exit sensor is not turned OFF within the specified time.	840ms
FFPS_N	FINISHER saddle transport path sensor not-reached JAM	Entry port sensor ON	The saddle transport path sensor is not turned ON within the specified time.	914ms
FFPS_S	FINISHER saddle transport path sensor remaining JAM	Saddle transport path sensor ON	The saddle transport path sensor is not turned OFF within the specified time.	996ms
	FINISHER saddle paper exit sensor not-reached JAM	Folding edge sensor ON (Completion of thrust operation)	The saddle transport sensor is not turned ON though paper is transported in the specified distance.	180mm (Twice as much as the normal distance)
	FINISHER saddle paper exit sensor remaining JAM	Saddle paper exit sensor ON	The saddle paper exit sensor is not turned OFF though paper is transported in the specified distance.	209.25mm (1.5 times as much as the normal distance)
FEXIT_S	FINISHER bundle exit remaining JAM	Start of bundle exit to the stack tray	The staple tray sensor is not turned OFF within the specified time.	1000ms
FSTPL	FINISHER Stacker staple JAM	Start of stacker stapling	When the staple HP sensor does not sense ON within the specified time from staple HP sensor OFF in stapling process, and when the staple HP sensor detects ON in reverse rotation after stopping the stapler.	500ms
	FINISHER saddle staple JAM	Start of saddle stapling	When the staple HP sensor does not sense ON within the specified time from stapler HP sensor OFF in stapling process, and when the staple HP sensor detects ON in reverse rotation after stopping the stapler.	500ms
FPNCH	FINISHER punch JAM	Punch HP OFF after starting punching	The punch HP sensor does not turn ON within the specified time.	200ms
FDOP	FINISHER door open JAM	One of finisher doors open	Finisher door open is detected in finishing process.	---

: Feb. 9 2004

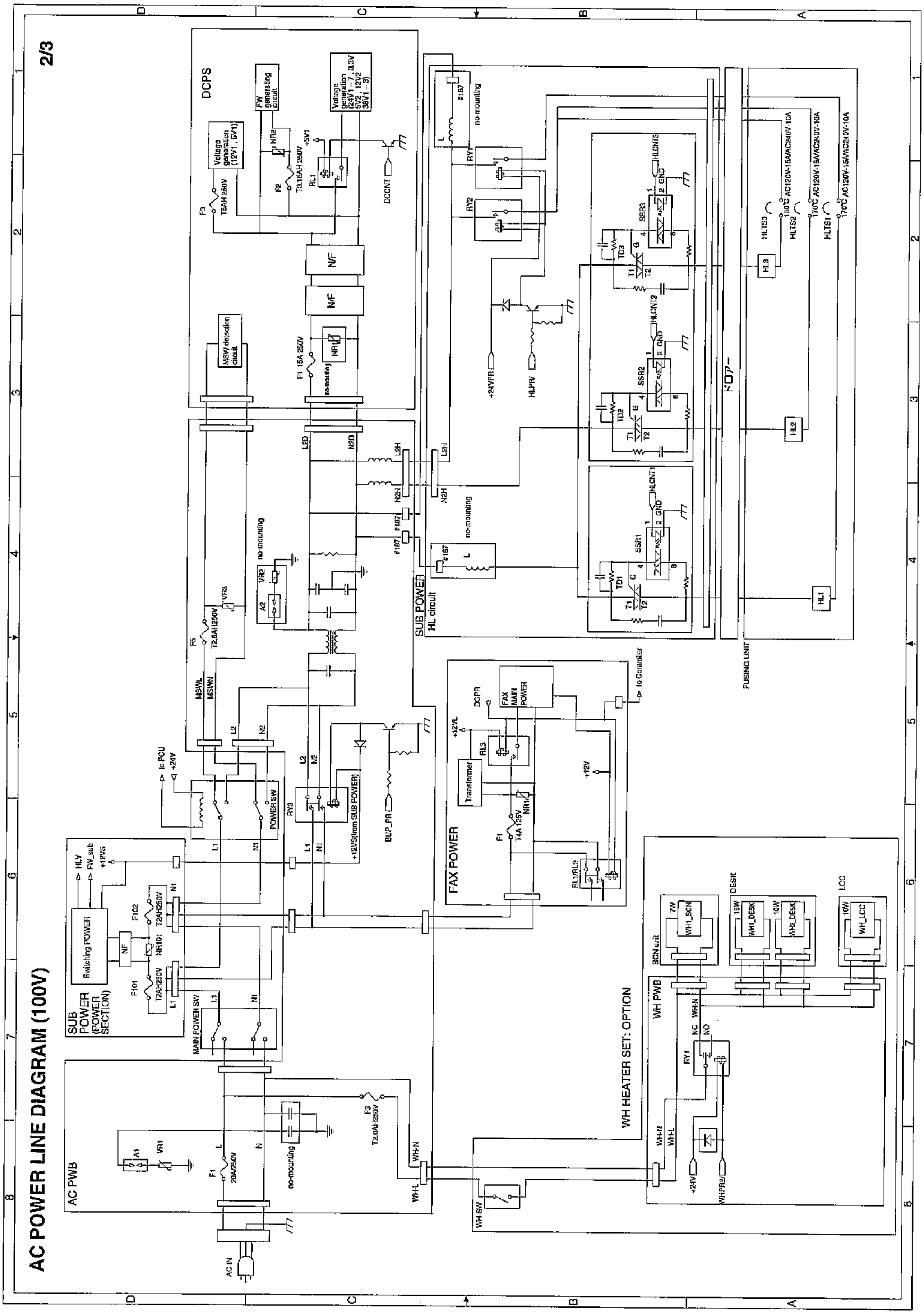
[13] ELECTRIC DIAGRAM

1. Overall block diagram



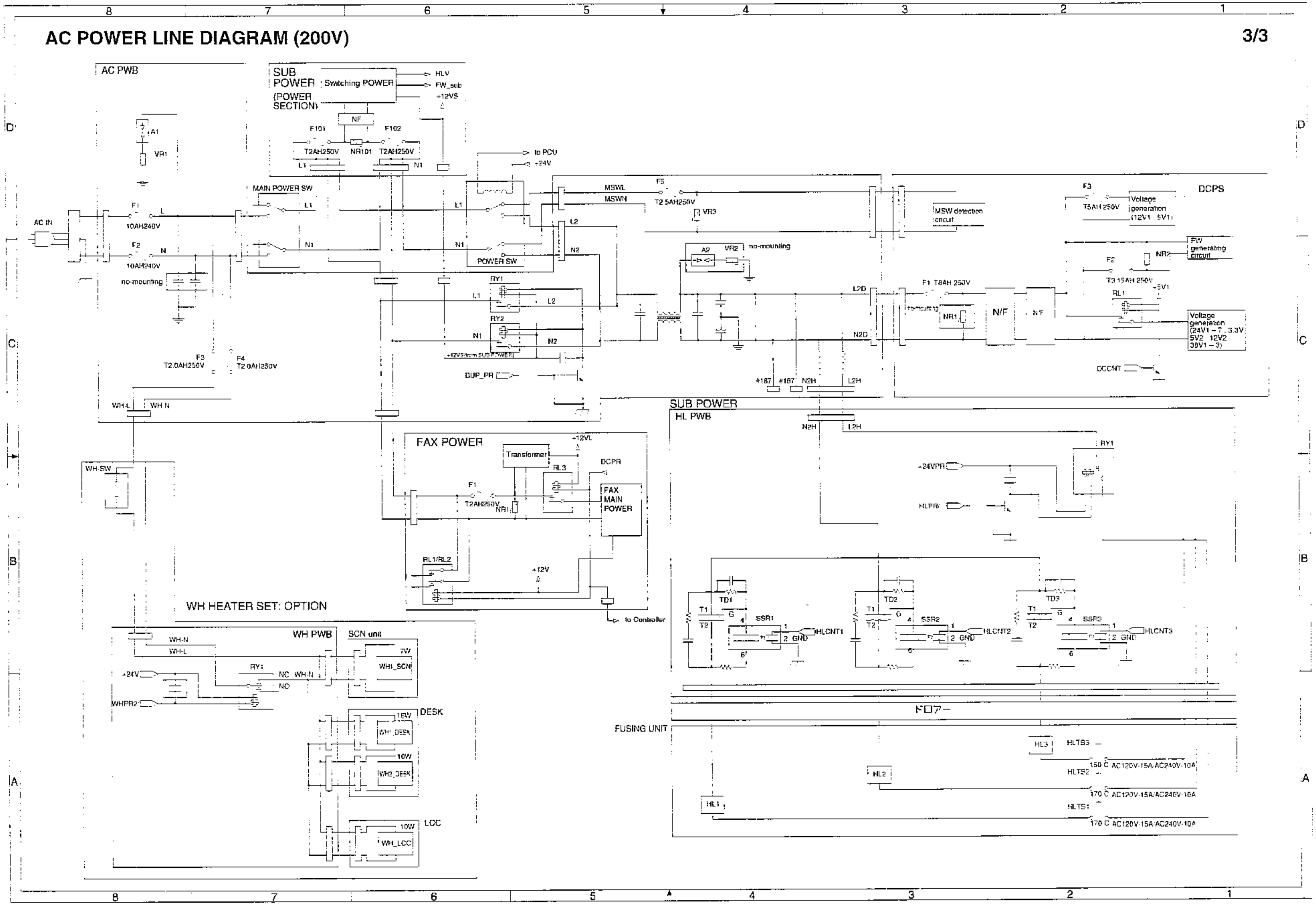
ENGINE
TRM
VPM
DELIVERY un
POM1
POM2
POD1
POD2
POD3
FM-U1
FM-U3
FM-U4
INTPWB TH-EX
FM-E1
FM-E2
FM-E3
FM-BL
FM-U2
FM-BR
FM-BU
BD
PGM
LSU un
LD PWB
FM-R1
FM-R2
FM-R3
INTPWB TH-RA
DM
DVM
FUM
MM
FM-DV
RRC
(OPTION) FIN
(OPTION) INSRTR
(OPTION) LCC
WH-LCC
①
DRIVER PWB
PCU PWB
LEFT DOOR un
ADUM2
ADUM1
DSW-L
APPD1
APPD2
PFD2
THPS2
TURM
AINPD
DSWD
DGS
TBPWB
TM2
HV
TLS
HUS-TC
TANSET
DSWDSK
DSKPFC1
DSKPFC2
MANUAL PAPER FEED un
DSW-R
MPLD1
MPLD2
MTOP1
MTOP2
MPFPWS
MPFC
MPFUS
MPED
MPFGS
MPFD1
MPFD2
LPPD
MPRD1
MPRD2
HPFC
HPLS
T1PPD
T1PFC
T1PUS
T1LUM
T1SPD
T1S PWB
T2PFC
T2PUS
T2LUM
T2SPD
T2S PWB
PAPER FEED un 1
M1PUS
M1PED
M1LUD
M1PFD
PAPER FEED un 2
M2PUS
M2PED
M2LUD
M2PFD
M1PFC
M1LUM
M1PWS
M1SS PWB
M1SPD
M2PFC
M2LUM
M2SS PWB
M2SPD
DSW-F
PNC
PROCESS un
PCS
DMS
DL
PSPS
INTPWB TH-CL
PS un
PSBC
PPD
DEVELOPER un
TCS
HUS-DV
HOPPER un
TFSD
TM1
CRUM
FM-DC1
FM-DC2
AC IN
FM-CTL
FM-HDD
MOTHER PWB
MFP CONTROL PWB
FUSING un
RTH1
RTH2
RTH3
HL1
HL2
HL3
SUB P/S PWB
AC PWB
MSW
MRSW
WH-SW
Standard : JPN
OPTION : EX100/EX200
WH PWB
WH-DSK1
WH-DSK2
HDD
DC/PS①
FAXPWB
FAX DC/PS (OPTION)
COIN VENDER (OPTION)
PNC
AUDITOR (OPTION)
ORSPD
CCD PWB
CL
STMP (OPTION)
SCN JNT PWB
SCNcnt PWB
MIM
MHPS
ORSLED
OCSW
Standard : JPN
OPTION : EX100/EX200
WH-SCN1
OPE PWB
BUZZER
LVDS/INV PWB
SPPD4
SPPD3
SPED2
STLD
SPFFAN
SPWS
SPLS2
SPLS1
SOCD
SPOD
CIScnt PWB
SLUM
SPF PWB
SCANNER OP PANEL un
LCD
BACKLIGHT
TOUCH PANEL
CCFT
DSPF un
CISun
SPFM
SPSM
SPFC
SPED1
SCOV
SPPD1
STUD
SPPD2
STRRC
STRRBC
STRC
STRBC
SRRC
SRRBC

2. Power line chart

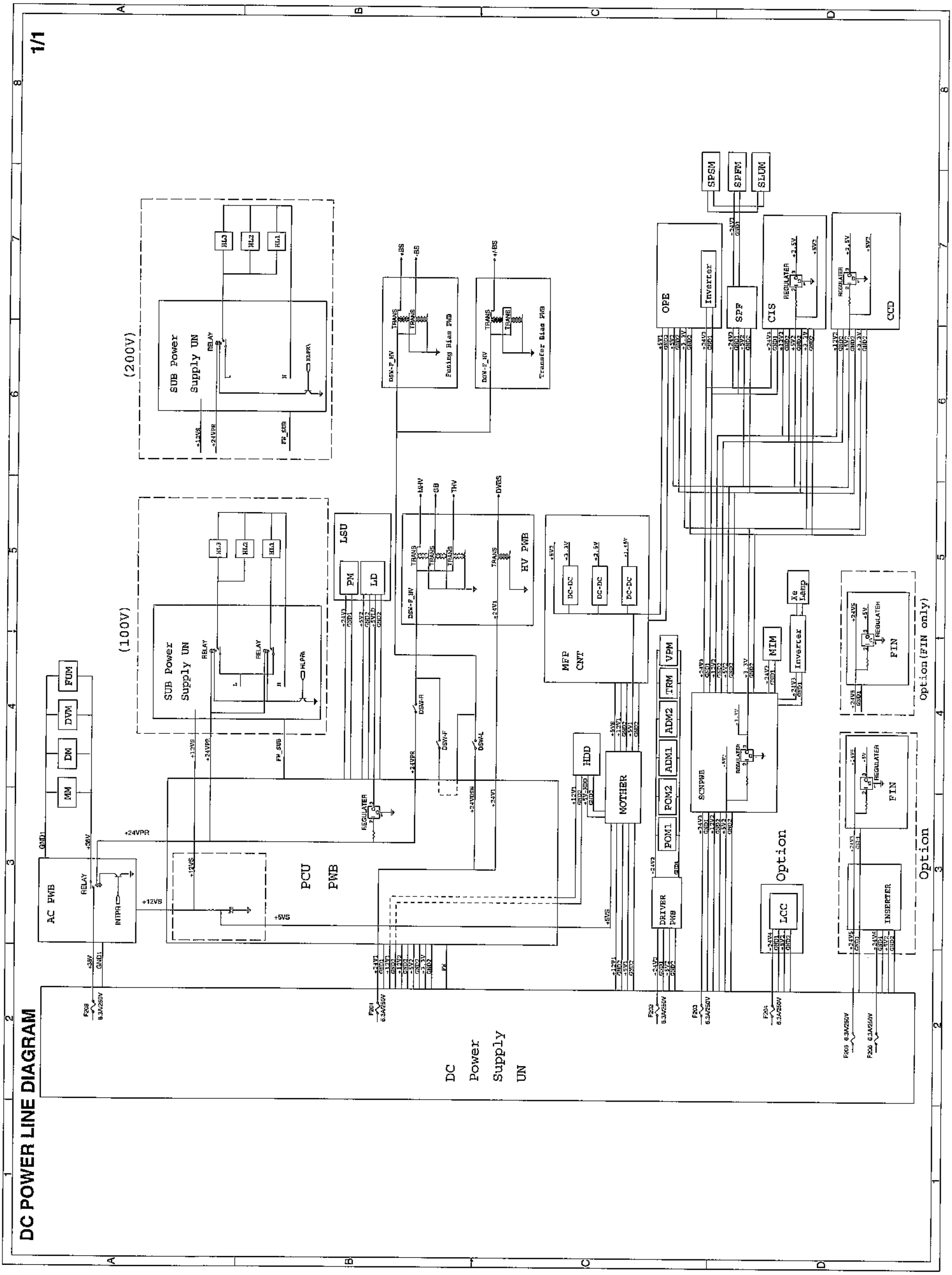

AC POWER LINE DIAGRAM (100V)
2/3
DCPS
Voltage generation (12V1, 5V1)
FW generating circuit
Voltage generation (24V1~7, 3.3V 5V2, 12V2 38V1~3)
F3 T5AH 250V
F2 T3.15AH 250V
NR2
RL1
+5V1
DCCNT
N/F
N/F
F1 15A 250V
NR1
no-mounting
MSW detection circuit
L2D
N2D
L2H
N2H
#187
no-mounting
A2
VR2
F5 T2.5A 250V
VR3
MSWL
MSWN
L2
N2
to PCU
+24V
POWER SW
RY3
L1
N1
+12VS(from SUB POWER)
BUP_PR
SUB POWER (POWER SECTION)
HLV
FW_sub
+12VS
Switching POWER
NF
F102 T2AH250V
NR101
F101 T2AH250V
MAIN POWER SW
AC PWB
A1
VR1
F1 20A/250V
F3 T2.0AH/250V
WH-N
WH-L
AC IN
SUB POWER HL circuit
RY1
RY2
+24VPR
HLPR
SSR1
SSR2
SSR3
TD1
TD2
TD3
T1
T2
G
HLCNT1
HLCNT2
HLCNT3
GND
HL1
HL2
HL3
HLTS1
HLTS2
HLTS3
170°C AC120V-15A/AC240V-10A
170°C AC120V-15A/AC240V-10A
150°C AC120V-15A/AC240V-10A
FUSING UNIT
FAX POWER
DCPR
FAX MAIN POWER
to Controller
+12VL
RL3
Transformer
NR1
F1 T4A 125V
+12V
RL1/RL2
WH HEATER SET: OPTION
WH PWB
SCN unit
7W WH1_SCN
DESK
18W WH1_DESK
10W WH2_DESK
LCC
10W WH_LCC
RY1
NC
NO
WH-N
WH-L
+24V
WHPR2
WH-SW

AC POWER LINE DIAGRAM (200V)

3/3


AC PWB
AC IN
F1 10AH240V
F2 10AH240V
L
N
A1
VR1
no-mounting
F3 T2.0AH250V
F4 T2.0AH250V
WH-L
WH N
WH SW
SUB POWER (POWER SECTION)
Switching POWER
HLV
FW_sub
+12VS
NF
F101 T2AH250V
NR101
F102 T2AH250V
L1
N1
MAIN POWER SW
to PCU
+24V
POWER SW
L2
N2
RY1
RY2
+12VS(from SUB POWER)
DUP_PR
MSWL
MSWN
F5 T2.5AH250V
VR3
A2
VR2
no-mounting
MSW detection circuit
DCPS
F3 T5AH250V
Voltage generation (12V1 5V1)
FW generating circuit
F2 T3.15AH 250V
NR2
RL1
+5V1
F1 T8AH 250V
NR1
N/F
Voltage generation (24V1 ~ 7, 3.3V 5V2, 12V2 38V1 ~ 3)
DCCNT
L2D
N2D
#187
N2H
L2H
SUB POWER
HL PWB
+24VPR
HLPR
FAX POWER
Transformer
+12VL
RL3
DCPR
FAX MAIN POWER
T2AH250V
RL1/RL2
+12V
to Controller
T1
T2
TD1
TD2
TD3
G
SSR1
SSR2
SSR3
HLCNT1
HLCNT2
HLCNT3
GND
FD7-
FUSING UNIT
HL1
HL2
HL3
HLTS1
HLTS2
HLTS3
150 C AC120V-15A/AC240V-10A
170 C AC120V-15A/AC240V-10A
170 C AC120V-15A/AC240V-10A
WH HEATER SET: OPTION
WH PWB
WH-N
WH-L
+24V
WHPR2
NC
NO
SCN unit
7W
WH_SCN
DESK
15W
WH1_DESK
10W
WH2_DESK
LCC
10W
WH_LCC
8
7
6
5
4
3
2
1
D
C
B
A

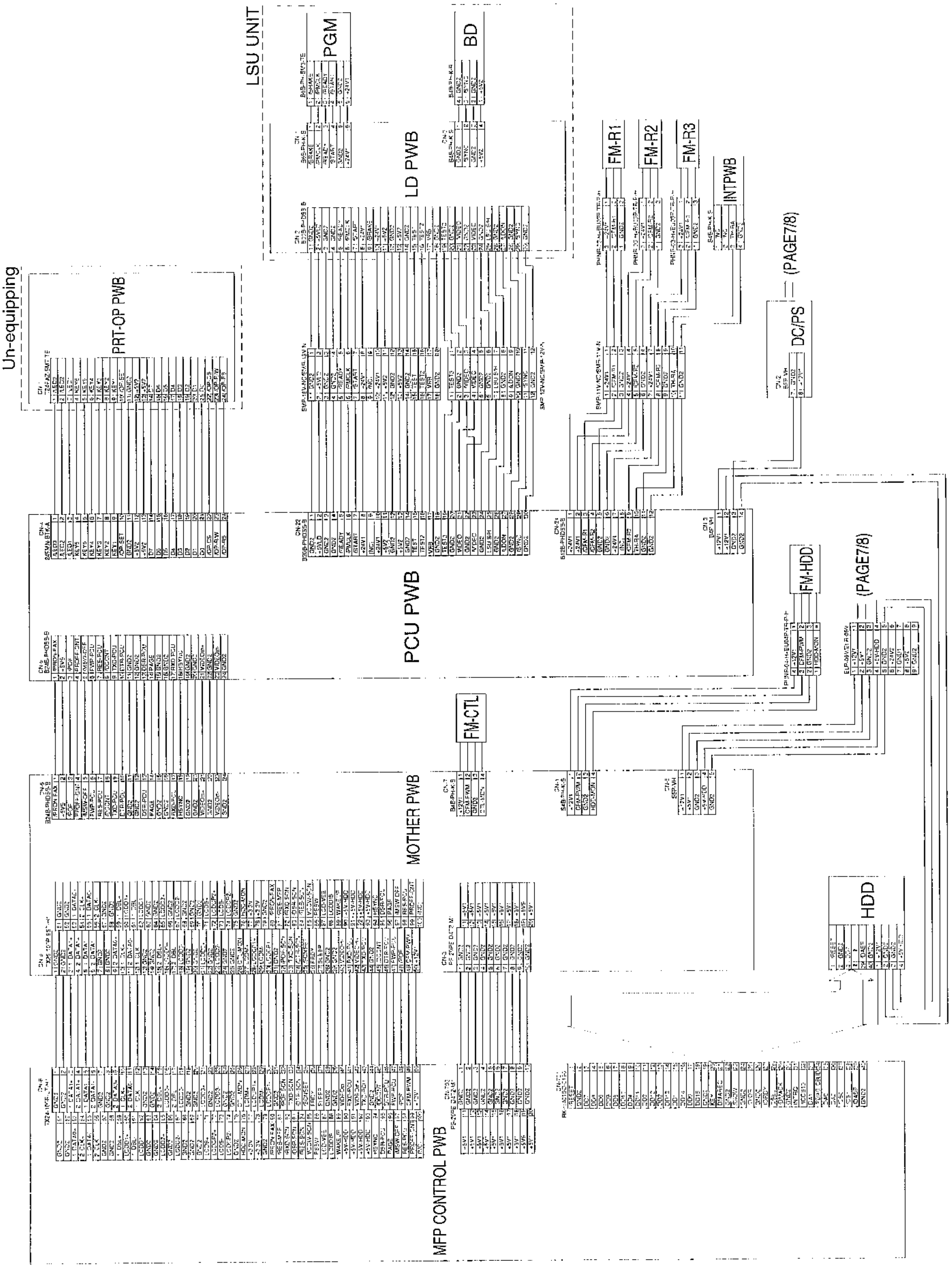
DC POWER LINE DIAGRAM


1/1
DC Power Supply UN
PCU PWB
AC PWB
RELAY
INTPR
MM
DM
DVM
FUM
SUB Power Supply UN
(100V)
(200V)
HL1
HL2
HL3
RELAY
HLPR
FW_SUB
+12VS
+24VPR
+5VS
+36V
GND1
REGULATER
LSU
PM
LD
HV PWB
DSW-F_HV
TRANS
MHV
GB
THV
DVBS
Fusing Bias PWB
Transfer Bias PWB
DSW-R
DSW-F
DSW-L
+24V1
+24VDSW
MFP CNT
DC-DC
+3.3V
+2.5V
+1.8V
HDD
MOTHER
DRIVER PWB
POM1
POM2
ADM1
ADM2
TRM
VPM
SCNPWB
MIM
Inverter
Xe Lamp
OPE
SPF
CIS
CCD
SPSM
SPFM
SLUM
LCC
Option
FIN
INSERTER
Option(FIN only)
F200 6.3A/250V
F201 6.3A/250V
F202 6.3A/250V
F203 6.3A/250V
F204 6.3A/250V
F205 6.3A/250V
F206 6.3A/250V
A
B
C
D
1
2
3
4
5
6
7
8

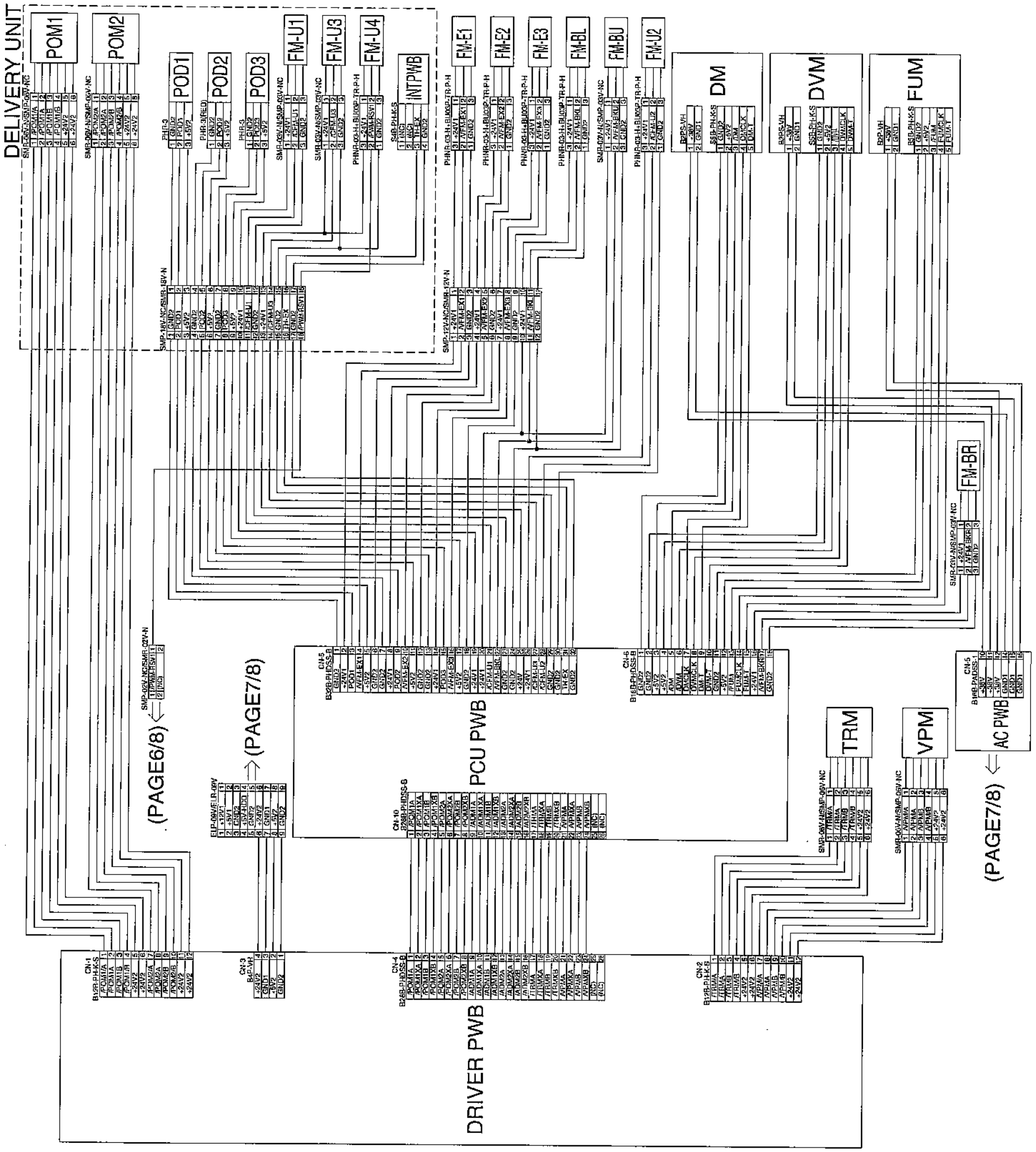
3. Actual wiring chart

A. Engine

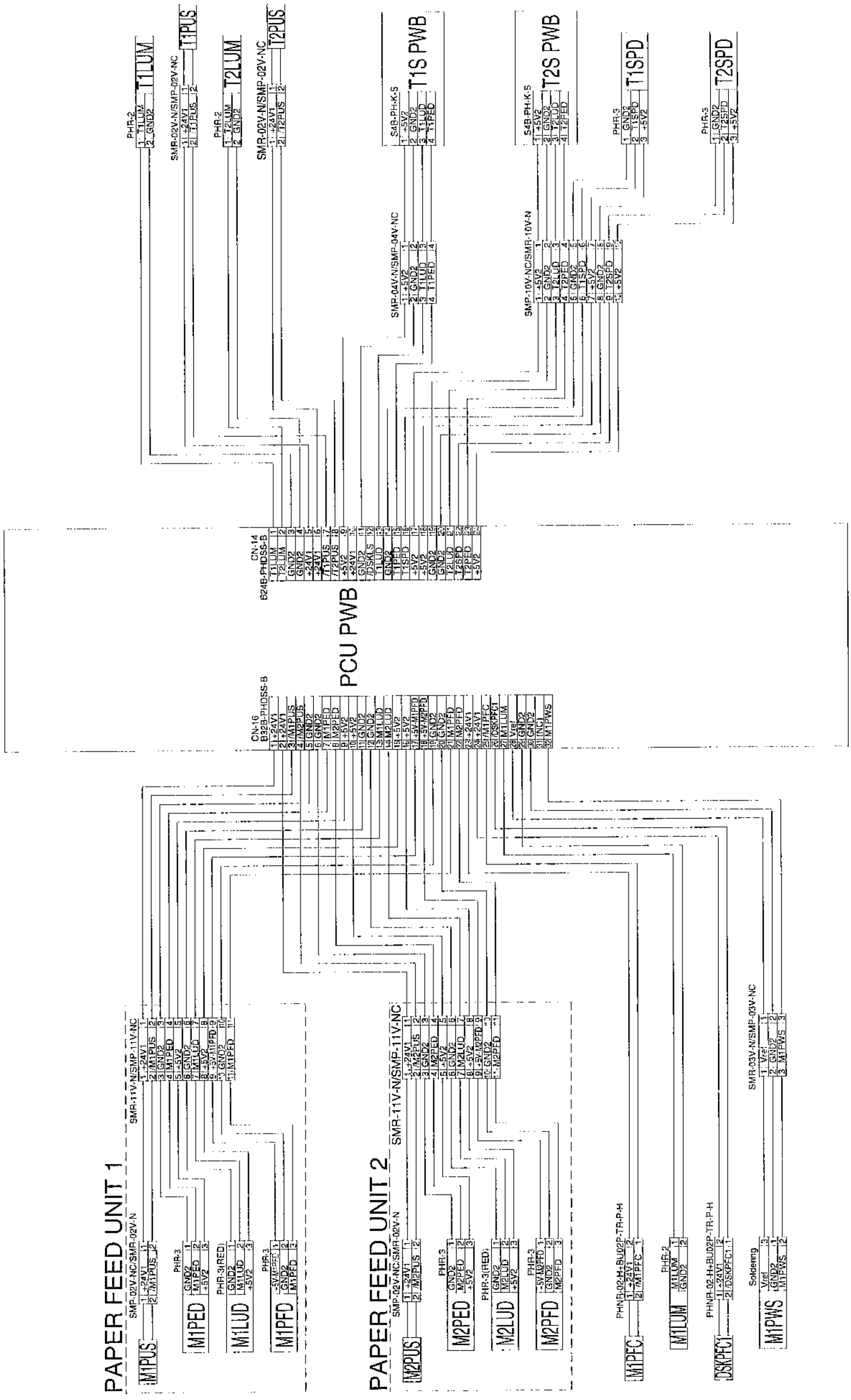
(1) IMAGE PROCESS SECTION (1/8)


LSU UNIT
PGM
BD
LD PWB
FM-R1
FM-R2
FM-R3
INTPWB
(PAGE7/8)
DC/PS
Un-equipping
PRT-OP PWB
PCU PWB
FM-HDD
(PAGE7/8)
FM-CTL
MOTHER PWB
HDD
MFP CONTROL PWB

(2) PAPER TRANSPORT SECTION (2/8)

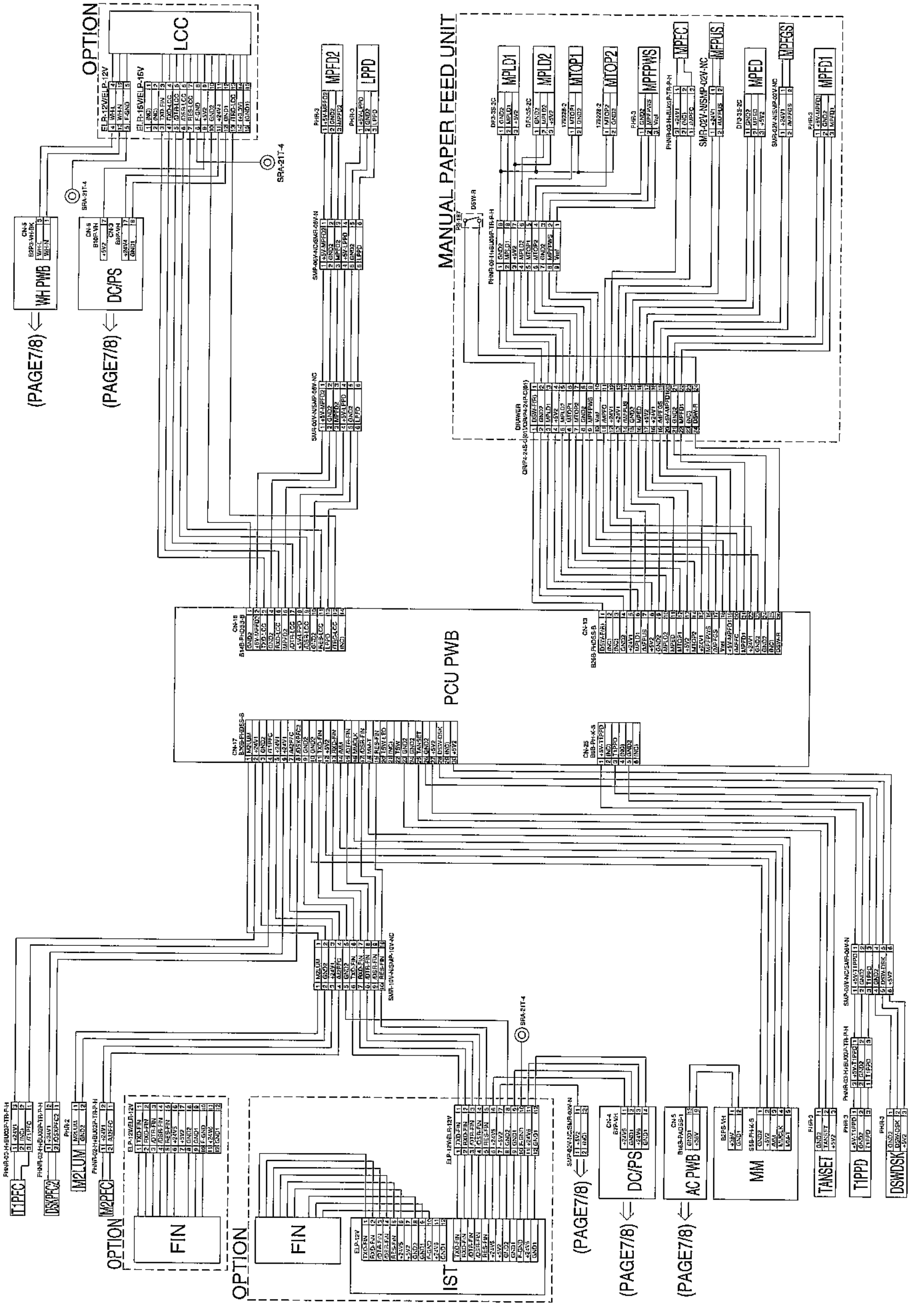

DELIVERY UNIT
POM1
POM2
POD1
POD2
POD3
FM-U1
FM-U3
FM-U4
INTPWB
FM-E1
FM-E2
FM-E3
FM-BL
FM-BU
FM-U2
DM
DVM
FUM
FM-BR
PCU PWB
CN-5
CN-6
CN-10
AC PWB
TRM
VPM
(PAGE6/8)
(PAGE7/8)
(PAGE7/8)
DRIVER PWB
CN-1
CN-3
CN-4
CN-2

(3) PAPER TRANSPORT SECTION (3/8)



PCU PWB
CN-14
B24B-PHDSS-B
1 T1LUM
2 T2LUM
3 GND2
4 GND2
5 +24V1
6 +24V1
7 /T1PUS
8 /T2PUS
9 +5V2
10 +24V1
11 GND2
12 /DSKLS
13 T1LUD
14 GND2
15 T1PED
16 T1SPD
17 +5V2
18 +5V2
19 GND2
20 GND2
21 T2LUD
22 T2SPD
23 T2PED
24 +5V2
CN-16
B32B-PHDSS-B
1 +24V1
2 +24V1
3 /M1PUS
4 /M2PUS
5 GND2
6 GND2
7 M1PED
8 M2PED
9 +5V2
10 +5V2
11 GND2
12 GND2
13 M1LUD
14 M2LUD
15 +5V2
16 +5V2
17 +5V.M1PFD
18 +5V.M2PFD
19 GND2
20 GND2
21 M1PFD
22 M2PFD
23 +24V1
24 +24V1
25 /M1PFC
26 /DSKPFC1
27 M1LUM
28 Vref
29 GND2
30 GND2
31 (NC)
32 M1PWS
T1LUM
PHR-2
1 T1LUM
2 GND2
T1PUS
SMR-02V-N/SMP-02V-NC
1 +24V1
2 /T1PUS
T2LUM
PHR-2
1 T2LUM
2 GND2
T2PUS
SMR-02V-N/SMP-02V-NC
1 +24V1
2 /T2PUS
T1S PWB
S4B-PH-K-S
1 +5V2
2 GND2
3 T1LUD
4 T1PED
SMR-04V-N/SMP-04V-NC
T2S PWB
S4B-PH-K-S
1 +5V2
2 GND2
3 T2LUD
4 T2PED
SMP-10V-NC/SMR-10V-N
1 +5V2
2 GND2
3 T2LUD
4 T2PED
5 GND2
6 T1SPD
7 +5V2
8 GND2
9 T2SPD
10 +5V2
T1SPD
PHR-3
1 GND2
2 T1SPD
3 +5V2
T2SPD
PHR-3
1 GND2
2 T2SPD
3 +5V2
PAPER FEED UNIT 1
SMR-11V-N/SMP-11V-NC
1 +24V1
2 /M1PUS
3 GND2
4 M1PED
5 +5V2
6 GND2
7 M1LUD
8 +5V2
9 +5V.M1PFD
10 GND2
11 M1PFD
M1PUS
SMP-02V-NC/SMR-02V-N
1 +24V1
2 /M1PUS
M1PED
PHR-3
1 GND2
2 M1PED
3 +5V2
M1LUD
PHR-3(RED)
1 GND2
2 M1LUD
3 +5V2
M1PFD
PHR-3
1 -5V.M1PFD
2 GND2
3 M1PFD
PAPER FEED UNIT 2
SMR-11V-N/SMP-11V-NC
1 +24V1
2 /M2PUS
3 GND2
4 M2PED
5 +5V2
6 GND2
7 M2LUD
8 +5V2
9 +5V.M2PFD
10 GND2
11 M2PFD
M2PUS
SMP-02V-NC/SMR-02V-N
1 +24V1
2 /M2PUS
M2PED
PHR-3
1 GND2
2 M2PED
3 +5V2
M2LUD
PHR-3(RED)
1 GND2
2 M2LUD
3 +5V2
M2PFD
PHR-3
1 -5V.M2PFD
2 GND2
3 M2PFD
M1PFC
PHNR-02-H+BU02P-TR-P-H
1 +24V1
2 /M1PFC
M1LUM
PHR-2
1 M1LUM
2 GND2
DSKPFC1
PHNR-02-H+BU02P-TR-P-H
1 +24V1
2 /DSKPFC1
M1PWS
Soldering
SMR-03V-N/SMP-03V-NC
1 Vref
2 GND2
3 M1PWS

(4) TRANSPORT/OPTION SECTION (4/8)


OPTION
LCC
WH PWB
(PAGE7/8)
DC/PS
(PAGE7/8)
SRA-21T-4
MPFD2
LPPD
MANUAL PAPER FEED UNIT
MPLD1
MPLD2
MTOP1
MTOP2
MPFPWS
MPFC1
MPFUS
MPED
MPFGS
MPFD1
DSW-R
DRAWER
PCU PWB
CN-16
CN-13
CN-17
CN-25
T1PFC
DSKPFC2
M2LUM
M2PFC
OPTION
FIN
FIN
IST
OPTION
(PAGE7/8)
DC/PS
(PAGE7/8)
AC PWB
(PAGE7/8)
MM
TANSET
T1PPD
DSWDSK

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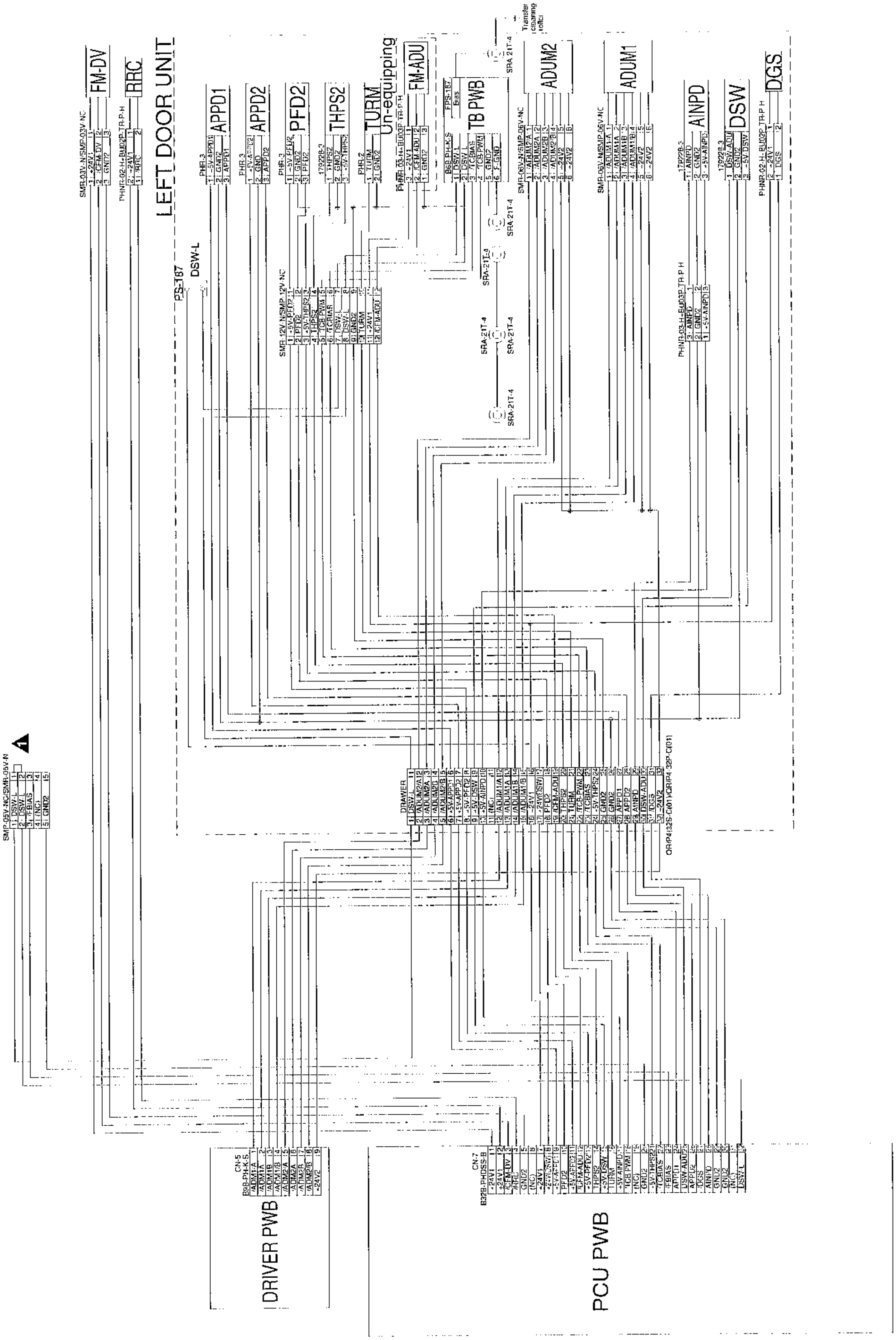
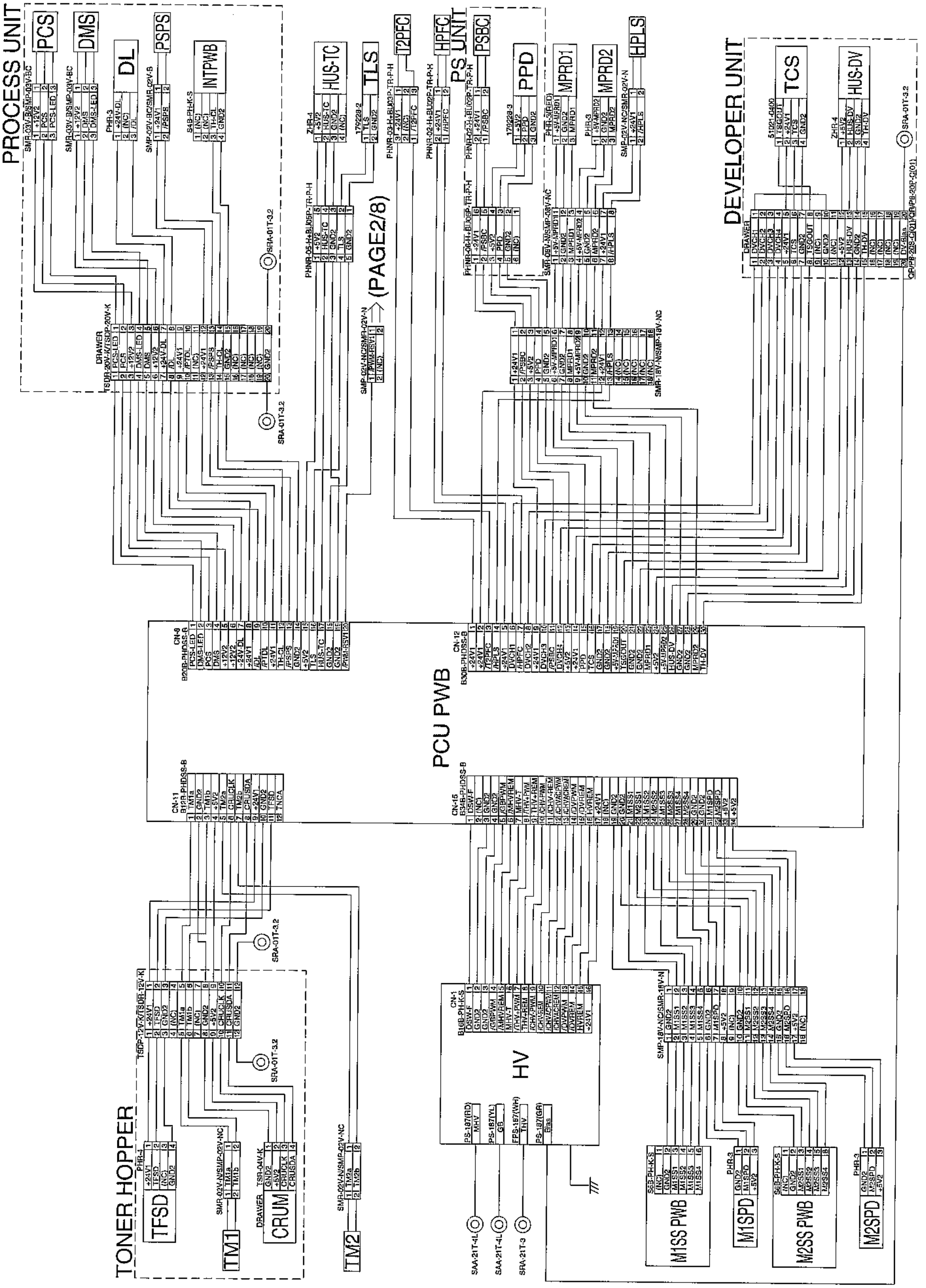
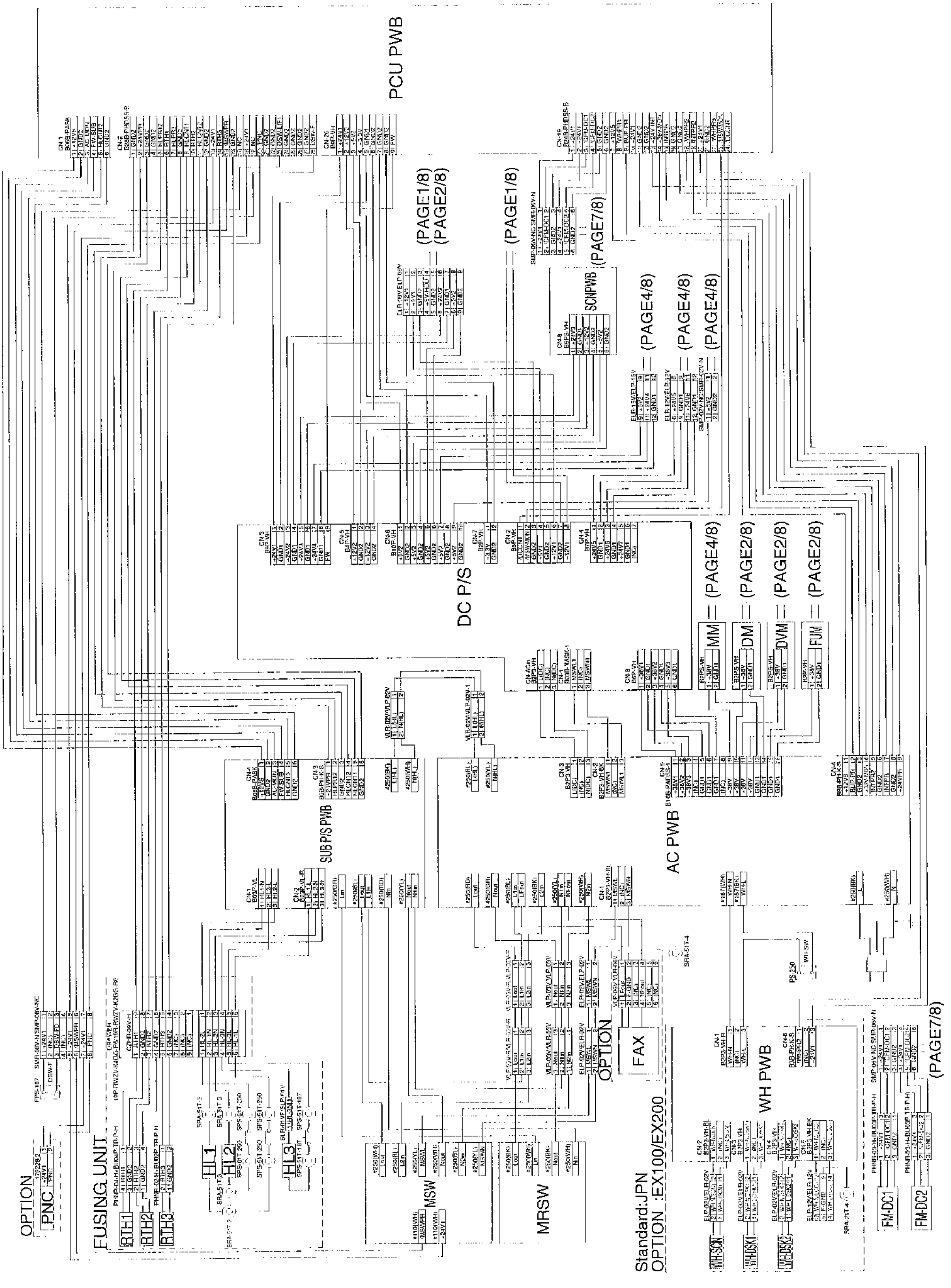
(5) LEFT DOOR TRANSPORT SECTION (5/8)


FM-DV
RRC
LEFT DOOR UNIT
APPD1
APPD2
PFD2
THPS2
TURM
Un-equipping
FM-ADU
TB PWB
Transfer cleaning roller
ADUM2
ADUM1
AINPD
DSW
DGS
PS-187
DSW-L
SRA-21T-4
DRAWER
CN-5
DRIVER PWB
CN-7
PCU PWB

(6) PROCESS SECTION (6/8)


PROCESS UNIT
PCS
DMS
DL
PSPS
INTPWB
HUS-TC
TLS
T2PFC
HPFC
PS UNIT
PSBC
PPD
MPRD1
MPRD2
HPLS
DEVELOPER UNIT
TCS
HUS-DV
(PAGE2/8)
PCU PWB
CN-8
CN-12
CN-11
CN-15
CN-1
HV
TONER HOPPER
TFSD
TM1
CRUM
TM2
M1SS PWB
M1SPD
M2SS PWB
M2SPD
SRA-01T-3.2
SAA-21T-4L
SAA-21T-4L
SRA-21T-3
MHV
GB
THV
Bias

(7) AROUND THE POWER SUPPLY SECTION (7/8)


PCU PWB
(PAGE1/8)
(PAGE2/8)
(PAGE1/8)
(PAGE7/8)
SCNPWB
(PAGE4/8)
(PAGE4/8)
(PAGE4/8)
DC P/S
MM (PAGE4/8)
DM (PAGE2/8)
DVM (PAGE2/8)
FUM (PAGE2/8)
SUB P/S PWB
AC PWB
OPTION
FAX
WH PWB
(PAGE7/8)
OPTION
PNC
FUSING UNIT
RTH1
RTH2
RTH3
HL1
HL2
HL3
MSW
MRSW
Standard:JPN
OPTION :EX100/EX200
WH-SCN
WH-DSK1
WH-DSK2
FM-DC1
FM-DC2

(8) PCU CONNECTOR LIST (8/8)

CN-1 B06B-PASK

1	+12VS	SUB P/S
2	GND2	
3	AC-MON	
4	FW-SUB	
5	HLCNT3	
6	GND2	

CN-2 B28B-PHDSS-B

SUB P/S	+24VPR	2	1	GND2	SUB P/S
	GND2	4	3	GND2	
RTH	RTH1	6	5	HLPR12	
	GND2	8	7	HLPR3	
	RTH2	10	9	HLCNT1	
	GND2	12	11	HLCNT2	
	RTH3	14	13	+24V1	MSW
	GND2	16	15	/MSWPR	
PNC	+24V1	18	17	+24V1	
	/PNC	20	19	DSW-FD	
	GND2	22	21	GND2	
	GND2	24	23	DSW-L(F)	DSW-F
	GND2	26	25	GND2	
DSW-F	DSW-F	28	27	GND2	

CN-3 B4P-VH

1	+12V1	HDD
2	+12V1	
3	GND2	
4	GND2	

CN-4 24FMN-BTK-A

1	/LED3	PRT-OP
2	/LED2	
3	/LED1	
4	KEY6	
5	KEY5	
6	KEY4	
7	KEY3	
8	KEY2	
9	KEY1	
10	/OP-SET	
11	GND2	
12	+5V2	
13	+5V2	
14	D7	
15	D6	
16	D5	
17	D4	
18	D3	
19	D2	
20	D1	
21	D0	
22	/OP-CS	
23	/OP-R/W	
24	/OP-RS	

CN-5 B32B-PHDSS-B

VFM-EX1	+24V1	2	1	GND2	POD1
	/VFM-EX1	4	3	POD1	
	GND2	6	5	+5V2	
VFM-EX2	+24V1	8	7	GND2	POD2
	/VFM-EX2	10	9	POD2	
	GND2	12	11	+5V2	
VFM-EX3	+24V1	14	13	GND2	POD3
	/VFM-EX3	16	15	POD3	
	GND2	18	17	+5V2	
VFM-BKL	+24V1	20	19	+24V1	CFM-U1
	/VFM-BKL	22	21	/CFM-U1	
	GND2	24	23	GND2	
CFM-U2	+24V1	26	25	+24V1	CFM-U3
	/CFM-U2	28	27	/CFM-U3	
	GND2	30	29	GND2	
TH-EX	GND2	32	31	TH-EX	TH-EX

CN-6 B18B-PHDSS-B

DVM	GND2	2	1	GND2	DM
	+5V2	4	3	+5V2	
	/DVM	6	5	/DM	
	DVMCLK	8	7	DMCLK	
	DVM-T	10	9	DM-T	
FUM	+5V2	12	11	GND2	FUM
	FUMCLK	14	13	/FUM	
VFM-BKR	+24V1	16	15	FUM-T	
	GND2	18	17	/VFM-BKR	VFM-BKR

CN-7 B32B-PHDSS-B

RRC	+24V1	2	1	+24V1	CFM-DV
	/RRC	4	3	/CFM-DV	
	(NC)	6	5	GND2	
ADU	+24V(DSW)	8	7	+24V1	ADU
	PFD2	10	9	+5V-APPD1	
	/CFM-ADU	12	11	+5V-APPD2	
	THPS2	14	13	+5V-PFD2	
	TURM	16	15	+5V-DSW	
	/TCB-PWM	18	17	+5V-AINPD	
	GND2	20	19	(NC)	
	/TCBIAS	22	21	+5V-THPS2	
	APPD1	24	23	/FBIAS	
	APPD2	26	25	DSW-ADU	
	AINPD	28	27	/DGS	
	GND2	30	29	GND2	
	DSW-L	32	31	(NC)	

CN-8 B20B-PHDSS-B

DMS	/DMS-LED	2	1	/PCS-LED	PCS
	DMS	4	3	PCS	
	+12V2	6	5	+12V2	
PTDL	+24V1	8	7	+24V-DL	DL
	/PTDL	10	9	/DL	
TH-CL	TH-CL	12	11	+24V1	PSPS
	GND2	14	13	/PSPS	
TLS	TLS	16	15	+5V2	HUS-TC
	GND2	18	17	HUS-TC	
CFM-U4	/PWM-RSV1	20	19	GND2	

CN-9 B24B-PHDSS-B

MOTH	+5VS	2	1	/PRON-FAX	MOTH
	PROFF-CNT	4	3	/POF	
	FWP-PCU	6	5	/MSW-OFF	
	/DCCNT	8	7	RES-PCU	
	DTR-PCU	10	9	TXD-PCU	
	GND2	12	11	GND2	
	PAGE	14	13	DSR-PCU	
	GND2	16	15	GND2	
	HSYNC	18	17	RXD-PCU	
	GND2	20	19	GND2	
	GND2	22	21	VIDEOin+	
	GND2	24	23	VIDEOin-	

CN-10 B26B-PHDSS-B

POM1	/POM1XA	2	1	/POM1A	POM1
	/POM1XB	4	3	/POM1B	
POM2	/POM2XA	6	5	/POM2A	POM2
	/POM2XB	8	7	/POM2B	
ADM1	/ADM1XA	10	9	/ADM1A	ADM1
	/ADM1XB	12	11	/ADM1B	
ADM2	/ADM2XA	14	13	/ADM2A	ADM2
	/ADM2XB	16	15	/ADM2B	
TRM	/TRMXA	18	17	/TRMA	TRM
	/TRMXB	20	19	/TRMB	
VPM	/VPMXA	22	21	/VPMA	VPM
	/VPMXB	24	23	/VPMB	
	(NC)	26	25	(NC)	

CN-11 B12B-PHDSS-B

CRUM	GND2	2	1	TM1a	TM1
	+5V2	4	3	TM1b	
	CRUCLK	6	5	TM2a	TM2
	CRUSDA	8	7	TM2b	
TFSD	GND2	10	9	+24V1	TFSD
TNCA	TNCA	12	11	TFSD	

CN-12 B30B-PHDSS-B

HPLS	+24V1	2	1	+24V1	T2PFC
	/HPLS	4	3	/T2PFC	
DV	DVCH1	6	5	+24V1	HPFC
	DVCH2	8	7	/HPFC	
	DVCH3	10	9	+24V1	PSBC
	DVCH4	12	11	/PSBC	
TCS	+24V1	14	13	+5V2	PPD
	TCS	16	15	PPD	
	GND2	18	17	GND2	
	TSGOUT	20	19	+5V-MPRD1	MPRD1
DV	GND2	22	21	GND2	
HUS-DV	+5V2	24	23	MPRD1	
	HUS-DV	26	25	+5V-MPRD2	MPRD2
	GND2	28	27	GND2	
	TH-DV	30	29	MPRD2	

CN-13 B26B-PHDSS-B

MPF	(NC)	2	1	DSW-F(R)	MPF
	GND2	4	3	(NC)	
	MPLD1	6	5	+24V1	
	+5V2	8	7	/MFPUS	
	MPLD2	10	9	GND2	
	MTOP1	12	11	MPED	
	MTOP2	14	13	+5V2	
	MPFPWS	16	15	+24V1	
	Vref	18	17	/MPFGS	
	/MPFC	20	19	+5V-MPFD1	
	+24V1	22	21	MPFD1	
	GND2	24	23	GND2	
	DSW-R	26	25	(NC)	

CN-14 B24B-PHDSS-B

T2LUM	T2LUM	2	1	T1LUM	T1LUM
	GND2	4	3	GND2	
T2PUS	+24V1	6	5	+24V1	T1PUS
	/T2PUS	8	7	/T1PUS	
DSKLS	+24V1	10	9	+5V2	T1LUD T1PED
	/DSKLS	12	11	GND2	
T1SPD	GND2	14	13	T1LUD	
	T1SPD	16	15	T1PED	
	+5V2	18	17	+5V2	T2LUD T2PED
T2SPD	GND2	20	19	GND2	
	T2SPD	22	21	T2LUD	
	+5V2	24	23	T2PED	

CN-15 B34B-PHDSS-B

HV	(NC)	2	1	DSW-F	HV
	GND2	4	3	GND2	
	/MHVREM	6	5	/GBPWM	
	/THV+PWM	8	7	MHV-T	
	/CHV-PWM	10	9	THV+REM	
	/CHVACPWM	12	11	/CHV-REM	
	/DVPWM	14	13	/CHVACREM	
	HVREM	16	15	/DVREM	
	(NC)	18	17	+24V1	
M2SS	GND2	20	19	GND2	M1SS
	M2SS1	22	21	M1SS1	
	M2SS2	24	23	M1SS2	
	M2SS3	26	25	M1SS3	
	M2SS4	28	27	M1SS4	
M2SPD	GND2	30	29	GND2	M1SPD
	M2SPD	32	31	M1SPD	
	+5V2	34	33	+5V2	

CN-16 B32B-PHDSS-B

M2PUS	+24V1	2	1	+24V1	M1PUS
	/M2PUS	4	3	/M1PUS	
M2PED	GND2	6	5	GND2	M1PED
	M2PED	8	7	M1PED	
	+5V2	10	9	+5V2	
M2LUD	GND2	12	11	GND2	M1LUD
	M2LUD	14	13	M1LUD	
	+5V2	16	15	+5V2	
M2PFD	+5V-M2PFD	18	17	+5V-M1PFD	M1PFD
	GND2	20	19	GND2	
	M2PFD	22	21	M1PFD	
DSKPFC1	+24V1	24	23	+24V1	M1PFC
	/DSKPFC1	26	25	/M1PFC	
M1PWS	Vref	28	27	M1LUM	M1LUM
	GND2	30	29	GND2	
	M1PWS	32	31	(NC)	

CN-17 B30B-PHDSS-B

T1PFC	+24V1	2	1	M2LUM	M2LUM
	/T1PFC	4	3	GND2	
DSKPFC2	+24V1	6	5	+24V1	M2PFC
	/DSKPFC2	8	7	/M2PFC	
MM	GND2	10	9	GND2	FIN
	+5V2	12	11	TXD-FIN	
	/MM	14	13	RXD-FIN	
	MMCLK	16	15	/DTR-FIN	
	MM-T	18	17	/DSR-FIN	
TSW	TSW-LED	20	19	RES-FIN	
	TSW	22	21	(NC)	
	GND2	24	23	GND2	TANSET
DSW-DSK	GND2	26	25	TANSET	
	DSW-DSK	28	27	+5V2	
	+5V2	30	29	(NC)	

CN-18 B14B-PHDSS-B

MPFD2	+5V-MPFD2	2	1	GND2	LCC
	GND2	4	3	TXD-LCC	
	MPFD2	6	5	RXD-LCC	
LPPD	+5V-LPPD	8	7	/DTR-LCC	
	GND2	10	9	/DSR-LCC	
	LPPD	12	11	RES-LCC	
	(NC)	14	13	/TRC-LCC	

CN-19 B24B-PHDSS-B

CFM-DC2	+24V1	2	1	+24V1	CFM-DC1
	/CFM-DC2	4	3	/CFM-DC1	
	GND2	6	5	GND2	
WH-DV	/WHPR1	8	7	+12VS	AC
	+24V1	10	9	BUP-PR	
	GND2	12	11	GND2	
	+38V-MON	14	13	+24V-INT	
	GND2	16	15	INTPR	
WH	/WHPR2	18	17	GND2	
	+24V1	20	19	INTPR2	
	/WHPR3	22	21	GND2	
DCPS	/DCCNT	24	23	/MSW-MON	DCPS

CN-20 B9P-VH

1	+24V1	POWER
2	+12V2	
3	+5V2	
4	+3.3V1	
5	GND1	
6	GND2	
7	GND2	
8	GND2	
9	FW	

CN-21 B12B-PHDSS-B

CFM-R2	+24V1	2	1	+24V1	CFM-R1
	/CFM-R2	4	3	/CFM-R1	
	GND2	6	5	GND2	
	(NC)	8	7	+24V1	CFM-R3
TH-RA	TH-RA	10	9	/CFM-R3	
	GND2	12	11	GND2	

CN-22 B30B-PHDSS-B

LSU	+5VLD	2	1	GND2	LSU
	GND2	4	3	GND2	
	/PGMCLK	6	5	/READY	
	+24V1	8	7	/START	
	+24V1	10	9	(NC)	
	GND2	12	11	+5V2	
	GND2	14	13	+5V2	
	TEST2	16	15	TEST	
	GND2	18	17	VRB	
	GND2	20	19	TEST3	
	GND2	22	21	VIDEO	
	GND2	24	23	/VIDEO	
	GND2	26	25	LSU S/H	
	GND2	28	27	/LDON	
	GND2	30	29	/SYNC	

CN-25 B6B-PH-K-S

1	+5V-T1PPD	T1PPD
2	(NC)	
3	T1PPD	
4	(NC)	
5	GND2	
6	(NC)	

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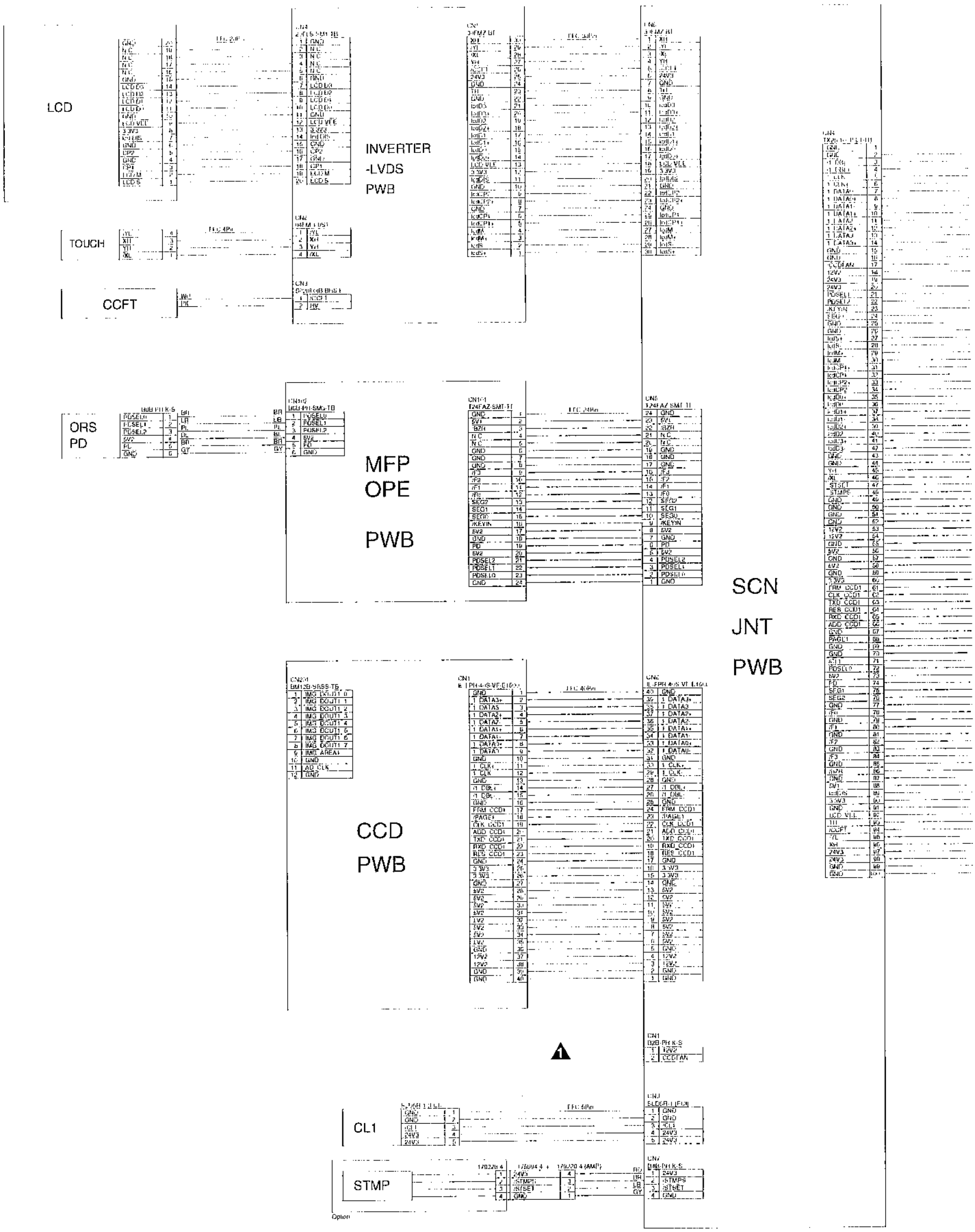
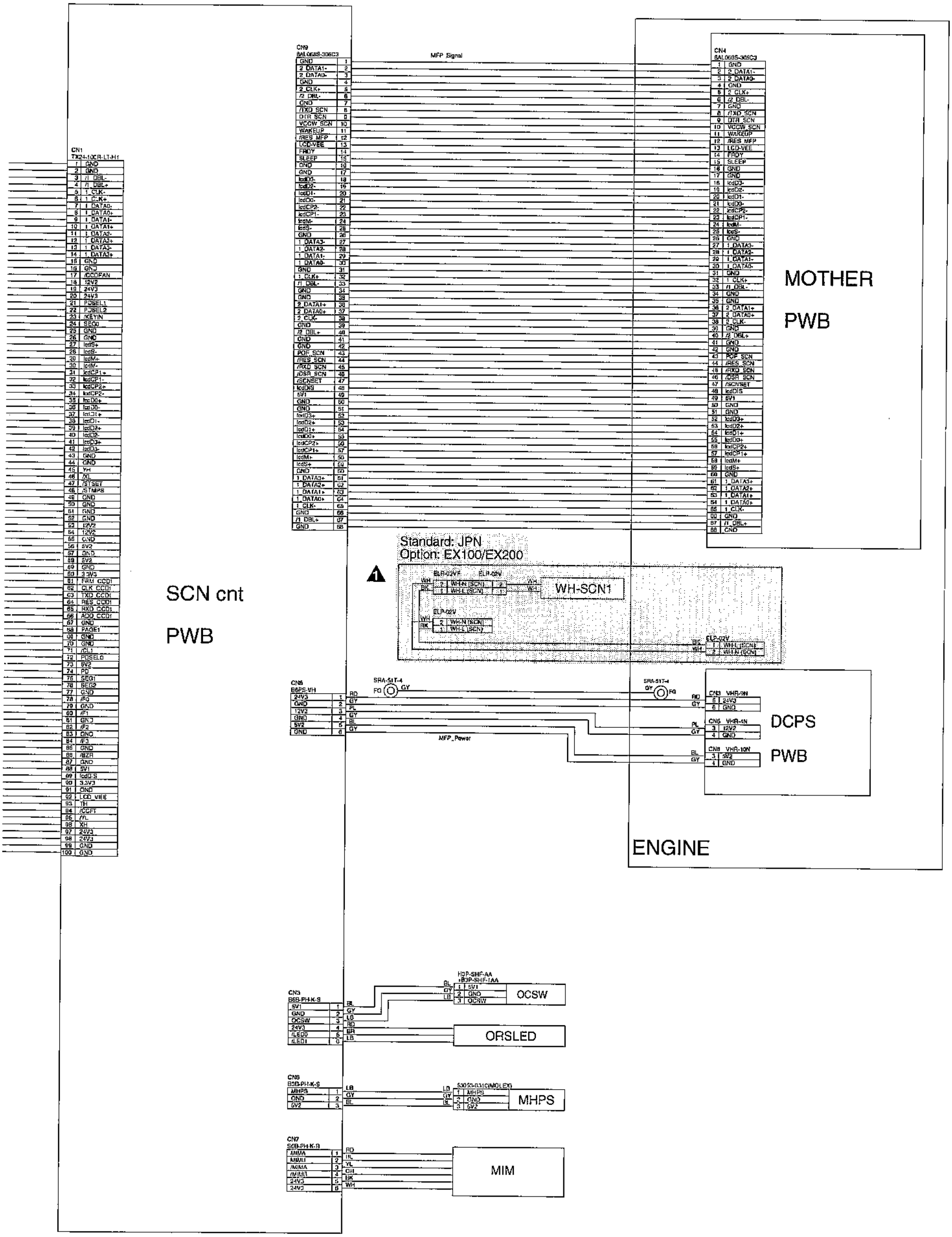
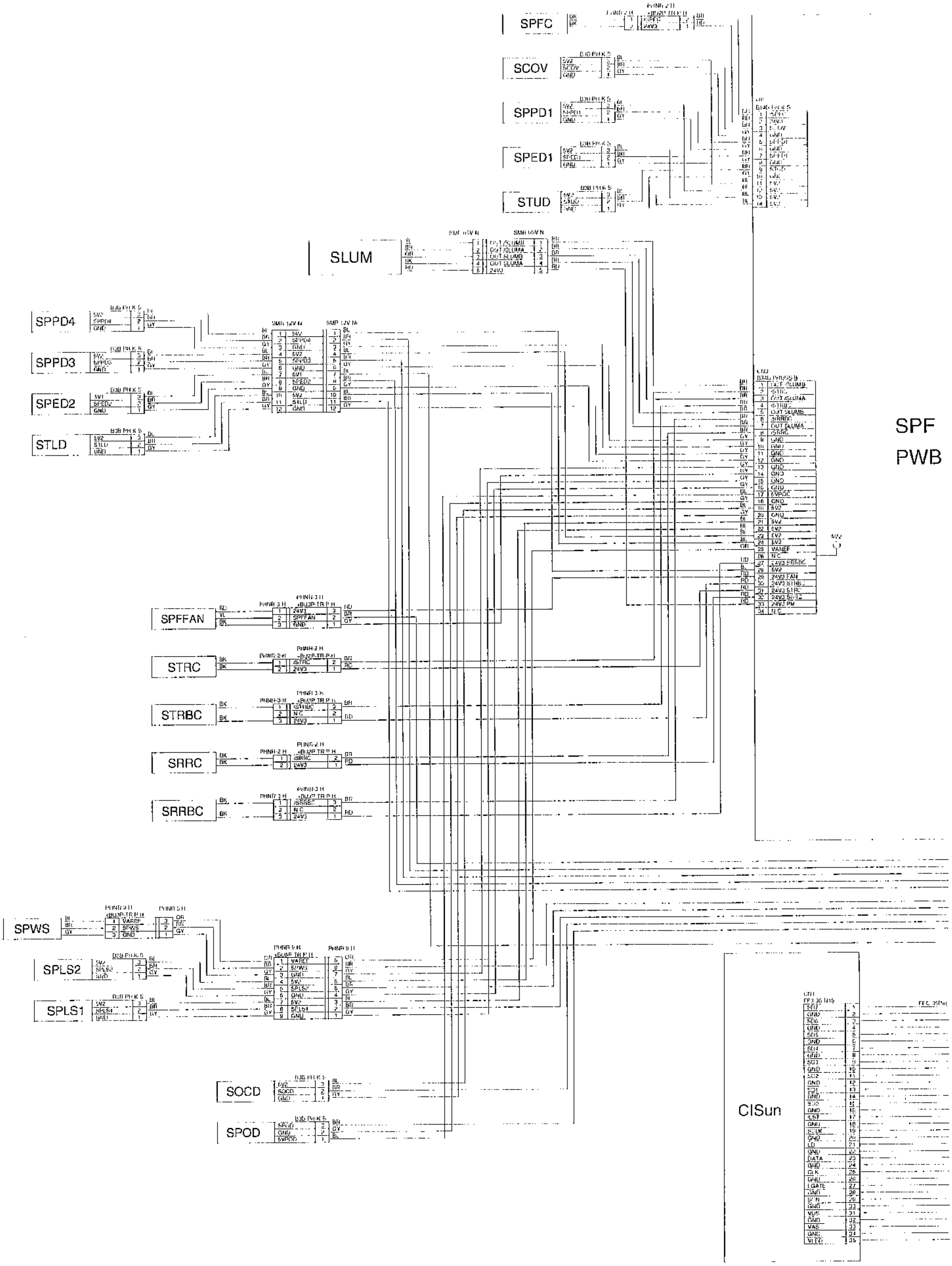
3. Scanner

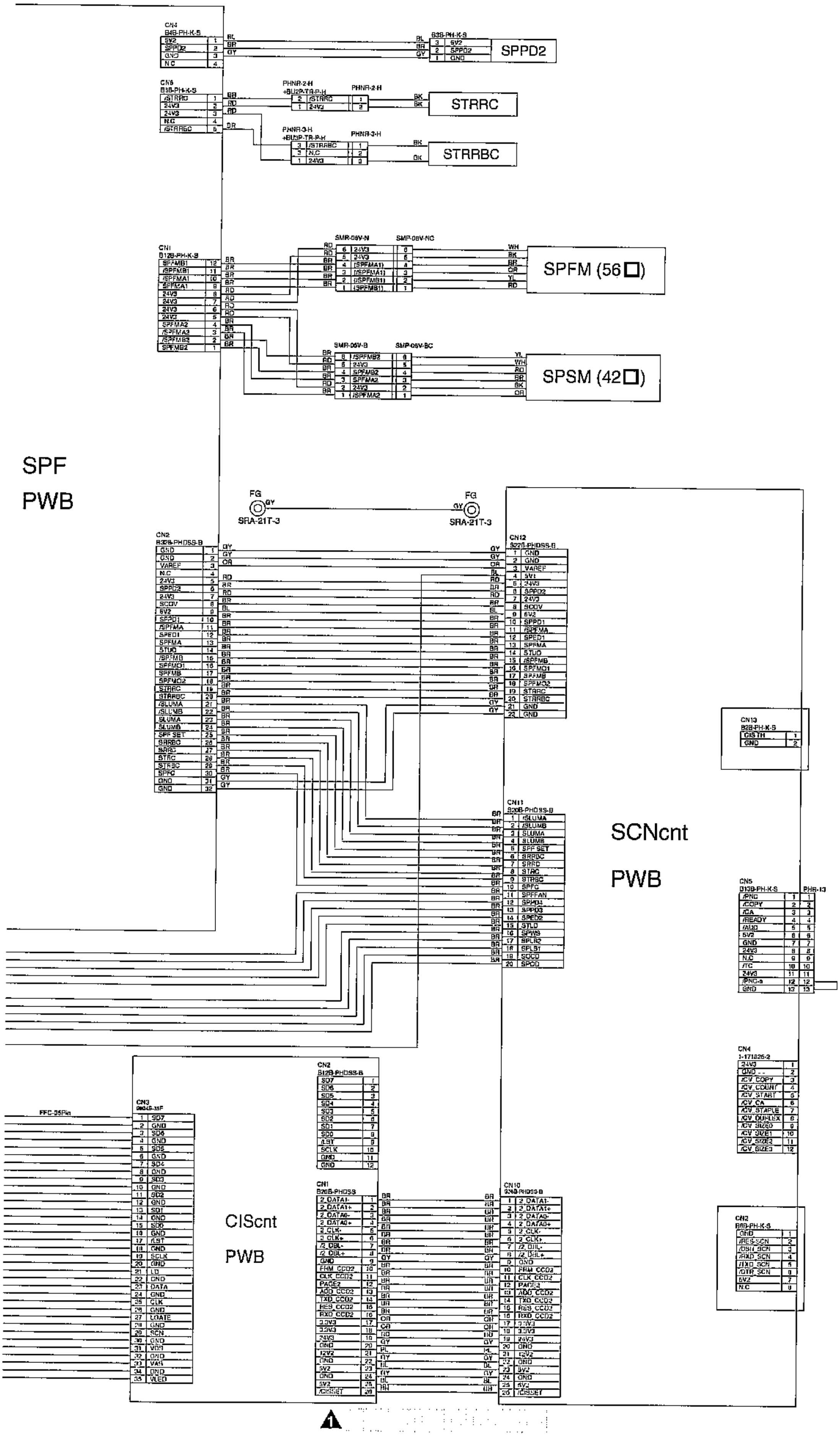
SCANNER (1/2)


LCD
TOUCH
CCFT
INVERTER
-LVDS
PWB
ORS
PD
MFP
OPE
PWB
CCD
PWB
SCN
JNT
PWB
CL1
STMP
Option
FFC 20Pin
FFC 4Pin
FFC 30Pin
FFC 24Pin
FFC 40Pin
FFC 6Pin
CN4
CN2
CN3
CN1
CN5
CN6
CN8
CN102
CN101
CN201
CN7


CN9
BAL068S-306C3
MFP Signal
CN4
BAL068S-305C3
MOTHER
PWB
CN1
TX24-100R-LT-H1
SCN cnt
PWB
Standard: JPN
Option: EX100/EX200
ELR-02VF
ELR-02V
WH-SCN1
ELP-02V
WH-N (SCN)
WH-L (SCN)
CN5
B6PS-VH
SRA-51T-4
MFP_Power
CN3 VHR-9N
CN6 VHR-4N
CN8 VHR-10N
DCPS
PWB
ENGINE
CN3
B6B-PH-K-S
H3P-SHF-AA
+B3P-SHF-1AA
OCSW
ORSLED
CN6
B3B-PH-K-S
53050-0310(MOLEX)
MHPS
CN7
S6B-PH-K-S
MIM

SCANNER (2/2)


SPFC
SCOV
SPPD1
SPED1
STUD
SLUM
SPPD4
SPPD3
SPED2
STLD
SPF
PWB
SPFFAN
STRC
STRBC
SRRC
SRRBC
SPWS
SPLS2
SPLS1
SOCD
SPOD
CISun


SPF
PWB
SCNcnt
PWB
CIScnt
PWB
CN4
B4B-PH-K-S
5V2
SPPD2
GND
N.C
B3B-PH-K-S
SPPD2
CN5
B5B-PH-K-S
/STRRC
24V3
24V3
N.C
/STRRBC
PHNR-2-H
+BU2P-TR-P-H
PHNR-2-H
STRRC
PHNR-3-H
+BU3P-TR-P-H
PHNR-3-H
STRRBC
CN1
B12B-PH-K-S
SMR-06V-N
SMP-06V-NC
SPFM (56□)
SMR-06V-B
SMP-06V-BC
SPSM (42□)
FG
SRA-21T-3
FG
SRA-21T-3
CN2
B32B-PHDSS-B
CN12
S22B-PHDSS-B
CN11
S20B-PHDSS-B
CN13
B2B-PH-K-S
CIS TH
GND
CN5
B13B-PH-K-S
PHR-13
/PNC
/COPY
/CA
/READY
/AUD
5V2
GND
24V3
N.C
/TC
24V3
/PNC-a
GND
CN4
1-171826-2
24V3
GND
/CV_COPY
/CV_COUNT
/CV_START
/CV_CA
/CV_STAPLE
/CV_DUPLEX
/CV_SIZE0
/CV_SIZE1
/CV_SIZE2
/CV_SIZE3
CN2
B8B-PH-K-S
GND
/RES_SCN
/DSR_SCN
/RXD_SCN
/TXD_SCN
/DTR_SCN
5V2
N.C
FFC-35Pin
CN3
CN2
B12B-PHDSS-B
CN1
B26B-PHDSS
CN10
S26B-PHDSS-B
▲

⚠ : Feb. 9 2004

[14] SIGNAL NAME LIST

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
/MIMA	Scanner motor control signal (Phase /A)	Scanner motor control (Phase /A)	—	—	7	3	SCN	
/MIMB	Scanner motor control signal (Phase /B)	Scanner motor control (Phase /B)	—	—	7	4	SCN	
/SLUMB	SPF paper feed tray lift-up motor control signal (Phase /B)	SPF paper feed tray lift-up motor control (Phase /B)	—	—	11	2	SCN	
/SLUMA	SPF paper feed tray lift-up motor control signal (Phase /A)	SPF paper feed tray lift-up motor control (Phase /A)	—	—	11	1	SCN	
/SPFMA	SPF motor control signal (Phase /A)	SPF motor control (Phase /A)	—	—	12	11	SCN	
/SPFMB	SPF motor control signal (Phase /B)	SPF motor control (Phase /B)	—	—	12	15	SCN	
/VIDEO	Image data signal	Image signal to LSU (PCU output)	—	—	22	23	PCU	
38VMON	38V monitor signal	Detection of 38V for interlock	OFF	ON	19	14	PCU	
ACMON	AC waveform monitor signal	SUB power source AC wave high value monitor (For heater lamp ON control) (Phase control)	—	—	1	3	PCU	
ADD_CCD1	CCD serial data area identification number (CCD)	Identification of address data and image data area in CCD serial data	—	—	1	66	SCN	
ADD_CCD2	CIS serial data area identification number (CIS)	Identification of address data and image data area in CIS serial data	—	—	10	13	SCN	
ADM1A	Duplex (ADU) motor 1 (Upstream side) control signal (Phase A)	Duplex (ADU) motor 1 (Upstream) control (Phase A)	—	—	10	9	PCU	
ADM1B	Duplex (ADU) motor 1 (Upstream side) control signal (Phase B)	Duplex (ADU) motor 1 (Upstream) control (Phase B)	—	—	10	11	PCU	
ADM1XA	Duplex (ADU) motor 1 (Upstream side) control signal (Phase /A)	Duplex (ADU) motor 1 (Upstream) control (Phase /A)	—	—	10	10	PCU	
ADM1XB	Duplex (ADU) motor 1 (Upstream side) control signal (Phase /B)	Duplex (ADU) motor 1 (Upstream) control (Phase /B)	—	—	10	12	PCU	
ADM2A	Duplex (ADU) motor 2 (Downstream side) control signal (Phase A)	Duplex (ADU) motor 2 (Upstream) control (Phase A)	—	—	10	13	PCU	
ADM2B	Duplex (ADU) motor 2 (Downstream side) control signal (Phase B)	Duplex (ADU) motor 2 (Upstream) control (Phase B)	—	—	10	15	PCU	
ADM2XA	Duplex (ADU) motor 2 (Downstream side) control signal (Phase /A)	Duplex (ADU) motor 2 (Upstream) control (Phase /A)	—	—	10	14	PCU	
ADM2XB	Duplex (ADU) motor 2 (Downstream side) control signal (Phase /B)	Duplex (ADU) motor 2 (Upstream) control (Phase /B)	—	—	10	16	PCU	
AINPD	Duplex (ADU) paper entry detection signal	Duplex (ADU) paper entry detection, detection of paper exit to finisher	Paper pass	—	7	28	PCU	
APPD1	Duplex (ADU) paper pass detection signal 1	Duplex (ADU) upstream paper pass detection	Paper pass	—	7	24	PCU	
APPD2	Duplex (ADU) paper pass detection signal 2	Duplex (ADU) midstream paper pass detection	Paper pass	—	7	26	PCU	
⚠ AUD	Auditor installation detection signal	Auditor installation detection	Counter available		5	5	SCN	
BUP-PRout	Power save mode relay signal	Selection of power save mode and normal power mode	Relay OFF	Relay ON	19	9	PCU	
BZR	Buzzer signal	Key touch sound buzzer signal	Ring		1	86	SCN	
CA	Clear all (Auditor) signal	Clear all (Auditor)	Clear		5	3	SCN	
CCDFAN	CCD fan motor control signal	CCD fan motor control	ON		1	17	SCN	Not used.

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
CCFT	Backlight control signal	Backlight control	ON		1	94	SCN	
CFM-DC1	Cooling fan motor control signal (Power source)	Power cooling fan motor control	Max. force of wind	Stop	19	3	PCU	
CFM-DC2	Cooling fan motor control signal (Power source)	Power cooling fan motor control	Max. force of wind	Stop	19	4	PCU	
CFM-DV	Cooling fan motor control signal (Developing)	Developing cooling fan motor control	Max. force of wind	Stop	7	3	PCU	
CFM-R1	Cooling fan motor control signal (LSU/Process section)	Cooling fan motor control (LSU, process section)	Max. force of wind	Stop	21	3	PCU	
CFM-R2	Cooling fan motor control signal (LSU/Process section)	Cooling fan motor control (LSU, process section)	Max. force of wind	Stop	21	4	PCU	
CFM-R3	Cooling fan motor control signal (LSU/Process section)	Cooling fan motor control (LSU, process section)	Max. force of wind	Stop	21	9	PCU	
CFM-U1	Cooling fan motor control	Cooling fan motor control (LSU, process section)	Max. force of wind	Stop	5	21	PCU	
CFM-U2	Cooling fan motor control signal (Paper exit, duplex (ADU) section) (Paper exit section rear side)	Paper exit, duplex (ADU) section cooling	Max. force of wind	Stop	5	28	PCU	
CFM-U3	Cooling fan motor control signal (Paper exit, duplex (ADU) section) (Front surface)	Paper exit, duplex (ADU) section cooling	Max. force of wind	Stop	5	27	PCU	
CHVACPWM	High voltage control output (Separation charger) (CHV)	Separation charger AC component PWM control	—	—	15	12	PCU	
CHVACREM	High voltage control output (Separation charger) (CHV)	Separation charger AC component ON/OFF control	ON	OFF	15	13	PCU	
CHV-PWM	High voltage control output (Separation charger) (CHV)	Separation charger DC component PWM control	—	—	15	10	PCU	
CHV-REM	High voltage control output (Separation charger) (CHV)	Separation charger DC component ON/OFF control	ON	OFF	15	11	PCU	
CISSET	CIS identification signal	CIS unit installation detection	CIS available		10	26	SCN	
CISTH	CIS temperature detection signal	CIS temperature detection	—	—	13	1	SCN	Not used.
CL1	Scanner lamp control signal	Scanner lamp control	ON		1	71	SCN	
CLK_CCD1	CCD serial data clock signal (CCD)	CD serial data output timing control (CCD)	—	—	1	62	SCN	
CLK_CCD2	CIS serial data clock signal (CIS)	CIS serial data output timing control (CIS)	—	—	10	11	SCN	
COPY	Copy status (Auditor)	Copy status signal (Auditor)	Copying		5	2	SCN	
CRUCLK	Communication CLK	CRUM communication CLK	—	—	11	6	PCU	
CRUSDA	Communication data address signal	CRUM communication data address signal	—	—	11	8	PCU	
CV_CA	Clear all signal (Coin vendor)	Clear all (Coin vendor)	Clear		4	6	SCN	
CV_COPY	Copy enable signal (Coin vendor)	Copy enable (Coin vendor)	Copy enable		4	3	SCN	
CV_COUNT	Count up signal (Coin vendor)	Count-up (Coin vendor)	Count UP		4	4	SCN	
CV_DUPLEX	Print count identification signal (Duplex mode) (For coin vendor)	Print count identification signal (Duplex mode) (For coin vendor) (Identification of single count or double count)	Duplex mode		4	8	SCN	
CV_SIZE0	Paper size signal 0 (Coin vendor)	Paper size 0 (Coin vendor)			4	9	SCN	Refer to the separate table (*2)
CV_SIZE1	Paper size signal 1 (Coin vendor)	Paper size 1 (Coin vendor)			4	10	SCN	
CV_SIZE2	Paper size signal 2 (Coin vendor)	Paper size 2 (Coin vendor)			4	11	SCN	
CV_SIZE3	Paper size signal 3 (Coin vendor)	Paper size 3 (Coin vendor)			4	12	SCN	
CV_STAPLE	Staple mode signal (Coin vendor)	Staple mode identification (Coin vendor)	Staple mode		4	7	SCN	
CV_START	Copy start signal (Coin vendor)	Copy start status (Coin vendor)	Copy start		4	5	SCN	
DCCNT	DC power control signal	DC power ON/OFF	OFF	ON	9 — 8 19 — 24		PCU	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
DGS	Paper exit gate solenoid control signal	Paper exit gate control	Duplex	Simplex	7	27	PCU	
DL	Discharge lamp control signal	Discharge lamp control	ON	OFF	8	9	PCU	
DM	OPC drum motor rotating speed control signal (ON/OFF)	OPS drum motor ON/OFF	ON	OFF	6	5	PCU	
DMCLK	OPC drum motor rotating speed control (CLK) signal	OPC drum motor RPM control	—	—	6	7	PCU	
DMS	OPC drum marking sensor signal	OPC drum mark detection	—	—	8	4	PCU	
DMS-LED	OPC drum marking sensor LED control signal	OPC drum marking LED light quantity control	—	—	8	2	PCU	
DM-T	OPC drum motor lock detection signal	OPC drum motor lock detection	Rotation	Stop/Lock	6	9	PCU	
DSKPFC1	Paper feed tray 3/4 paper transport clutch control signal 1	Paper feed tray 3/4 paper transport control	Paper transport	—	16	26	PCU	
DSKPFC2	Paper feed tray 3/4 paper transport clutch control signal 2	Paper feed tray 3/4 paper transport control	Paper transport	—	17	8	PCU	
DSR_FIN	Serial communication control signal	Receive control	—	—	17	17	PCU	
DSR_LCC	Serial communication control signal	Receive control	—	—	18	9	PCU	
DSR_SCN	Serial I/F send enable (MFP)	Receive control	—	—	9	46	SCN	
DSW-ADU	Duplex (ADU) cover open/ close detection signal	Duplex (ADU) cover open/ close detection	Duplex (ADU) door open	Duplex (ADU) door close	7	25	PCU	
DSW-DSK	Left door open/close detection signal (Desk section)	Left door open/close detection (Desk section)	Desk left door open	Desk left door close	17	28	PCU	
DSW-F_HV	DC low voltage power (+24V) line signal for generating high voltage	High voltage power source (+24V)	—	High voltage available	15	1	PCU	
DSW-F	Front door open/close detection signal	Front door open/close detection	Left door open or Front door open	Left door close and Front door close	2	28	PCU	
DSW-L	Left door open/close detection signal	Left door open/close detection	Left door open	Left door close	7	32	PCU	
DSW-R	Manual feed open/close detection signal	Manual feed open/close detection	Left door open or Front door open or manual unit pull-out	Left door close and Front door close and manual unit insertion	13	26	PCU	
DTR_FIN	Serial communication control signal	Send control	—	—	17	15	PCU	
DTR_LCC	Serial communication control signal	Send control	—	—	18	7	PCU	
DTR_SCN	Serial I/F receive enable signal (MFP)	Send control	—	—	9	9	SCN	
DVCH1	DV unit identification signal 1	Detection of installation			12	6	PCU	
DVM	Developing motor control signal	Developing motor ON/OFF	ON	OFF	6	6	PCU	
DVMCLK	Developing motor rotating speed control (CLK) signal	Developing motor control RPM control	—	—	6	8	PCU	
DVM-T	Developing motor lock detection signal	Developing motor lock detection	Rotation	Stop/Lock	6	10	PCU	
DVPWM	Developing bias voltage control signal (PWM)	Developing bias PWM control	—	—	15	14	PCU	
DVREM	Developing bias control (ON/ OFF) signal	Developing bias ON/OFF	ON	OFF	15	15	PCU	
F0	Operation panel LED matrix signal 0	Switching	—	—	1	78	SCN	
F1	Operation panel LED matrix signal 1	Switching	—	—	1	80	SCN	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
F2	Operation panel LED matrix signal 2	Switching	—	—	1	82	SCN	
F3	Operation panel LED matrix signal 3	Switching	—	—	1	84	SCN	
FBIAS	Fusing bias output control signal	Fusing bias output ON/OFF control	ON	OFF	7	23	PCU	
FRDY	FAX LED lighting signal	LED lighting control in power save mode, iFAX, FAX nighttime mode		LED ON	9	14	SCN	
FRM_CCD1	CCD image data effective area signal (CCD)	CCD image data effective area control (CCD)	—	—	1	61	SCN	
FRM_CCD2	CIS image data effective area signal (CIS)	CIS image data effective area control (CIS)	—	—	10	10	SCN	
FUM	Fusing motor control signal	Fusing motor ON/OFF	ON	OFF	6	13	PCU	
FUMCLK	Fusing motor rotating speed control (CLK) signal	Fusing motor control CLK	—	—	6	14	PCU	
FUM-T	Fusing motor lock detection signal	Fusing motor lock detection	Rotation	Stop/Lock	6	15	PCU	
FW	AC power source full wave signal	Power monitor	—	—	20	9	PCU	
FW_SUB	Sub power source full wave signal	Sub power full wave signal	—	—	1	4	PCU	
FWP-PCU	Flash write protect signal	Flash write protect	—	—	9	6	PCU	
GBPWM	Making charger grid bias voltage (PWM) control signal	Main charger grid bias voltage (PWM) control	—	—	15	5	PCU	
HLCNT1	Upper fusing roller center heater lamp control signal	Upper fusing roller center heating control	OFF	ON	2	9	PCU	
HLCNT2	Upper fusing roller center heater lamp control signal	Upper fusing roller edges heating control	OFF	ON	2	11	PCU	
HLCNT3	Sub heat roller heater lamp control signal	Sub heat roller heater lamp control	OFF	ON	1	5	PCU	
HLPRout	Fusing heater lamp power relay control signal	Fusing heater lamp power relay control	Relay OFF	Relay ON	2	5	PCU	
HLPRout3	Fusing heater lamp power relay 3 control signal	Fusing heater lamp power relay 3 control	Relay OFF	Relay ON	2	7	PCU	
HPFC	Horizontal paper transport clutch control signal	Horizontal paper transport clutch control	Paper transport	—	12	7	PCU	
HPLS	Paper guide lock solenoid control signal	Paper guide lock solenoid control	Lock	—	12	4	PCU	
HSYNC	Horizontal sync signal	Horizontal sync	—	—	9	18	PCU	
HUS-DV	Developing humidity sensor	Developing section peripheral humidity detection	—	—	12	26	PCU	
HUS-TC	Transfer humidity sensor	Transfer section peripheral humidity detection	—	—	8	17	PCU	
HVREMout	High voltage control output control signal (MC/DV/TC)	High voltage ON/OFF control signal (MC/DV/TC)	OFF	ON	15	16	PCU	
INTPR2out	Interlock power relay "RY5" control signal	AC PWB relay "RY5" control (38V line interlock relay)	Relay OFF	Relay ON	19	19	PCU	
INTPRout	Interlock power relay "RY4" control signal	AC PWB relay "RY4" control (38V line interlock relay)	Relay OFF	Relay ON	19	15	PCU	
LDON	Laser ON/OFF control signal	Laser ON/OFF control	—	—	22	27	PCU	
LED0	Document size detection LED control signal 1	Document size detection LED control	—	—	3	5	SCN	
LED1	Document size detection LED control signal 0	Document size detection LED control	—	—	3	6	SCN	
LPPD	LCC paper pass detection signal	Detection of paper entry from LCC	Paper pass	—	18	12	PCU	
LSU_S/H	Laser beam horizontal sync signal	Laser beam horizontal position timing control	—	—	22	25	PCU	
M1LUD	Paper tray upper limit detection signal (Paper feed tray 3)	Paper tray upper limit detection (Paper feed tray 3)	Upper limit	—	16	13	PCU	
M1LUM	Lift-up motor control signal (Paper feed tray 3)	Lift-up motor control (Paper feed tray 3)	Stop	Up	16	27	PCU	
M1PED	Paper empty detection signal (Paper feed tray 3)	Paper empty detection (Paper feed tray 3)	Paper empty	Paper present	16	7	PCU	

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Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
M1PFC	Paper feed clutch (M1) control signal (Paper feed tray 3)	Paper feed tray 3 paper feed control	Paper transport	—	16	25	PCU	
M1PFD	Paper pass detection signal (Multi paper feed tray 3)	Paper feed tray 3 paper pass detection	Paper pass	—	16	21	PCU	
M1PUS	Paper pickup solenoid control signal (Paper feed tray 3)	Paper pickup roller control (Paper feed tray 3)	Roller UP	Paper feed	16	3	PCU	
M1PWS	Paper feed tray paper width detection signal (Paper feed tray 3)	Multi paper feed tray paper width detection (Paper feed tray 3)	—	—	16	32	PCU	
M1SPD	Paper remaining quantity detection signal (Paper feed tray 3)	Paper remaining quantity detection (Multi paper feed tray 3)	—	Remaining paper quantity 66% or less	15	31	PCU	
M1SS1	Paper size detection signal (Paper feed tray 3)	Paper size detection (Paper feed tray 3)			15	21	PCU	Refer to the separate table (*1)
M1SS2	Paper size detection signal (Paper feed tray 3)	Paper size detection (Paper feed tray 3)			15	23	PCU	
M1SS3	Paper size detection signal (Paper feed tray 3)	Paper size detection (Paper feed tray 3)			15	25	PCU	
M1SS4	Paper size detection signal (Paper feed tray 3)	Paper size detection (Paper feed tray 3)			15	27	PCU	
⚠ M2LUD	Paper tray upper limit detection signal (Paper feed tray 4)	Paper tray upper limit detection (Paper feed tray 4)	—	Upper limit detection	16	14	PCU	
M2LUM	Lift-up motor control signal (Paper feed tray 4)	Lift-up motor control (Paper feed tray 4)	Stop	Up	17	1	PCU	
M2PED	Paper empty detection signal (Paper feed tray 4)	Paper empty detection (Paper feed tray 4)	Paper empty	Paper present	16	8	PCU	
M2PFC	Paper feed clutch (M1) control signal (Paper feed tray 4)	Paper feed tray 4 paper feed control	Paper transport	—	17	7	PCU	
M2PFD	Paper pass detection signal (Multi paper feed tray 4)	Paper feed tray 4 paper pass detection	Paper pass	—	16	22	PCU	
M2PUS	Paper pickup solenoid control signal (Paper feed tray 4)	Paper pickup roller control (Paper feed tray 4)	Roller UP	Paper feed	16	4	PCU	
M2SPD	Paper remaining quantity detection (Paper feed tray 4) signal	Paper remaining quantity detection (Paper feed tray 4)	—	Remaining paper quantity 66% or less	15	32	PCU	
M2SS1	Paper size detection signal (Paper feed tray 4)	Paper size detection (Paper feed tray 4)			15	22	PCU	Refer to the separate table (*1)
M2SS2	Paper size detection signal (Paper feed tray 4)	Paper size detection (Paper feed tray 4)			15	24	PCU	
M2SS3	Paper size detection signal (Paper feed tray 4)	Paper size detection (Paper feed tray 4)			15	26	PCU	
M2SS4	Paper size detection signal (Paper feed tray 4)	Paper size detection (Paper feed tray 4)			15	28	PCU	
MFPUS	Paper pickup solenoid (MFP) control signal (Manual paper feed)	Paper pickup solenoid (MPF) control (Manual paper feed)	Paper feed with the roller down	—	13	7	PCU	
MHPS	Scanner home position sensor signal	Scanner home position detection		Home position	6	1	SCN	
MHVREM	Main charger control signal	Main charger ON/OFF	ON	OFF	15	6	PCU	
MHV-T	Main charger trouble detection signal	Main charger trouble detection	Trouble, no MHV	Normal	15	7	PCU	
MIMA	Scanner motor control signal (Phase A)	Scanner motor control (Phase A)	—	—	7	1	SCN	
MIMB	Scanner motor control signal (Phase B)	Scanner motor control (Phase B)	—	—	7	2	SCN	
MM	Main motor control signal	Main motor ON/OFF control	ON	OFF	17	14	PCU	
MMCLK	Main motor rotating speed control (CLK) signal	Main motor RPM control	—	—	17	16	PCU	
MM-T	Main motor lock detection signal	Main motor lock detection	Rotation	Stop/Lock	17	18	PCU	
⚠ MPED	Manual feed paper empty detection signal	Manual paper feed tray paper empty detection	Paper present	Paper empty	13	11	PCU	

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Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
MPFC	Paper feed clutch control signal (Manual feed)	Manual feed tray paper feed roller control	Paper feed	—	13	20	PCU	
MPFD1	Manual feed paper pass detection signal 1	Manual tray paper pass detection	—	Paper pass	13	21	PCU	
⚠ MPFD2	Manual feed paper pass detection signal 2	Manual tray and LCC paper pass detection	Paper pass	—	18	6	PCU	
MPFGS	Manual feed gate solenoid control signal	Manual feed gate control	Paper pass enable	Stopper	13	17	PCU	
MPFPWS	Manual feed paper width detection signal	Manual feed paper width detection	—	—	13	16	PCU	
MPLD1	Manual feed paper length detection signal 1	Manual paper feed tray paper length detection (Short)	—	Paper present	13	6	PCU	
MPLD2	Manual feed paper length detection signal 1	Manual paper feed tray paper length detection (Long)	—	Paper present	13	10	PCU	
⚠ MPRD1	Paper feed tray 2 paper pass detection signal 1	Manual feed/paper feed tray 2/ LCC paper pass detection	Paper pass	—	12	23	PCU	
⚠ MPRD2	Paper feed tray 2 paper pass detection signal 2	Manual feed/paper feed tray 2/ LCC paper pass detection	Paper pass	—	12	29	PCU	
MSWMON	MSW monitor signal	Main switch monitor	—	—	19	23	PCU	
MSWOFF	MSW OFF signal	Main switch OFF signal	—	—	9	5	PCU	
MSWPR	Main switch power relay control signal	Main switch power relay control	Relay ON	Relay OFF	2	15	PCU	
MTOP1	Manual tray pull-out position detection signal 1	Manual paper feed tray pull-out position detection (Storing position)	Store	—	13	12	PCU	
MTOP2	Manual tray pull-out position detection signal 2	Manual paper feed tray pull-out position detection (Pull-out position)	Pull out	—	13	14	PCU	
OCSW	SPF open/close detection signal	Document size detection trigger	Close		3	3	SCN	
PAGE	Page signal	Print timing control for controller (Output for every page)	—	—	9	14	PCU	
PAGE1	Image effective area signal (CCD)	Indicates image data area of one page. (CCD)	—	—	1	68	SCN	
PAGE2	Image effective area signal (CIS)	Indicates image data area of one page. (CIS)	—	—	10	12	SCN	
PCS	Image density sensor signal	Detection of density of toner patch on the OPC drum	—	—	8	3	PCU	
PCS-LED	Image density sensor LED current control signal	Image density sensor LED light emitting quantity control	—	—	8	1	PCU	
PCU_DSR	Serial communication control signal	Send control signal (Serial communication)	—	—	9	13	PCU	
PCU_DTR	Serial communication control signal	Receive control signal (Serial communication)	—	—	9	10	PCU	
PCU_RES	PCU reset signal	PCU reset by the controller	Operation enable	Reset	9	7	PCU	
PCU_RXD	Serial communication send data signal	Send data to the controller	—	—	9	17	PCU	
PCU_TXD	Serial communication receive data signal	Receive data from the controller	—	—	9	9	PCU	
PD	Document size detection signal	OC document size detection analog signal	—	—	1	74	SCN	
PDSEL0	Document detection select signal 0	Document size detection signal select	—	—	1	72	SCN	
PDSEL1	Document detection select signal 1	Document size detection signal select	—	—	1	21	SCN	
PDSEL2	Document detection select signal 2	Document size detection signal select	—	—	1	22	SCN	
⚠ PFD2	Paper pass detection signal 2	Paper pass detection (Left door unit) from duplex (ADU)/No. 1, 3, 4 paper feed tray	Paper pass	—	7	10	PCU	
PGMCLK	LSU motor RPM control signal (CLK)	LSU motor RPM control	—	—	22	6	PCU	
PNC	Count-up signal (Auditor)	Count up (Auditor)	Count UP		5	1	SCN	

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Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
PNC-a	Count-up signal (Personal counter)	Count up (Personal counter)			2	20	PCU	
POD1	Paper exit detection 1 signal	Paper exit detection from fusing	Paper pass	—	5	3	PCU	
POD2	Paper exit detection 2 signal	Paper pass detection from paper exit	Paper pass	—	5	9	PCU	
⚠ POD3	Paper exit detection 3 signal	Paper exit detection to upper section paper exit tray (Full detection)	—	Paper pass (Full detection)	5	15	PCU	
POF	Power OFF status signal	Power OFF status	Power OFF	Power ON	9	3	PCU	
POF_SCN	Power off signal	Power OFF status signal (Output from PCU)	Power OFF		9	43	SCN	
POM1A	Paper exit motor 1 (Fusing side) control signal (Phase A)	Paper exit unit (Fusing side) paper transport	—	—	10	1	PCU	
POM1B	Paper exit motor 1 (Fusing side) control signal (Phase B)	Paper exit unit (Fusing side) paper transport	—	—	10	3	PCU	
POM1XA	Paper exit motor 1 (Fusing side) control signal (Phase /A)	Paper exit unit (Fusing side) paper transport	—	—	10	2	PCU	
POM1XB	Paper exit motor 1 (Fusing side) control signal (Phase /B)	Paper exit unit (Fusing side) paper transport	—	—	10	4	PCU	
POM2A	Paper exit motor 2 (Paper exit side) control signal (Phase A)	Paper exit unit (paper exit side) paper transport	—	—	10	5	PCU	
POM2B	Paper exit motor 2 (Fusing side) control signal (Phase B)	Paper exit unit (paper exit side) paper transport	—	—	10	7	PCU	
POM2XA	Paper exit motor 2 (Fusing side) control signal (Phase /A)	Paper exit unit (paper exit side) paper transport	—	—	10	6	PCU	
POM2XB	Paper exit motor 2 (Fusing side) control signal (Phase /B)	Paper exit unit (Paper exit side) paper transport	—	—	10	8	PCU	
PPD	Resist roller front paper pass detection signal	Paper pass detection in front of resist roller	Paper pass	—	12	15	PCU	
PROFF_CNT	BUP-PR control signal (Main power OFF signal)	Main power OFF signal (output from controller)	—	End	9	4	PCU	
PRON_FAX	BUP-PR control signal (Main power ON signal)	Main power ON signal (Output front FAX unit)	Boot	—	9	1	PCU	
PSBC	Resist roller brake clutch control signal	Resist roller brake clutch control	—	Paper transport enable	12	11	PCU	
PSPS	Separation solenoid control signal	Separation solenoid control	Separation	—	8	13	PCU	
⚠ PWM-RSV1	Cooling fan motor control signal (Paper exit, duplex (ADU) section (Top surface))	Paper exit, duplex (ADU) section cooling	Max. blowing capacity	Stop	8	20	PCU	
READY	LSU motor lock detection signal	LSU motor lock detection	Rotation	Stop/Lock	22	5	PCU	
READY	Copy enable signal (Auditor)	Copy enable (Auditor)	Copy enable		5	4	SCN	
⚠ RES_CCD1	Reset signal (CCD)	Reset (CCD)		Reset	1	64	SCN	
⚠ RES_CCD2	Reset signal (CIS)	Reset (CIS)		Reset	10	15	SCN	
RES_FIN	Finisher reset signal	Finisher reset	Operation enable	Reset	17	19	PCU	
RES_LCC	LCC reset signal	LCC reset	Operation enable	Reset	18	11	PCU	
RES_MFP	Main unit reset signal (MFP)	Not used.	Reset		9	12	SCN	
RES_SCN	Scanner reset signal	Scanner reset (output from controller)	Reset		9	44	SCN	
RRC	Resist roller clutch control signal	Resist roller clutch control (The relative position of print image and paper is controlled.)	Paper transport	—	7	4	PCU	
⚠ RTH1	Heat roller temperature detection signal	Heat roller temperature detection (Center section)	—	—	2	6	PCU	
⚠ RTH2	Pressure roller temperature detection signal	Pressure roller temperature detection (Edge section)	—	—	2	10	PCU	
RTH3	Sub heat roller temperature detection signal	Sub heat roller temperature detection	—	—	2	14	PCU	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
RXD_CCD1	Serial I/F data (CCD)	Serial I/F data (CCD-scanner control PWB)	—	—	1	65	SCN	
RXD_CCD2	Serial I/F data (CIS)	Serial I/F data (CCD-scanner control PWB)	—	—	10	16	SCN	
RXD_FIN	Serial I/F data (FINISHER)	Serial I/F data (Finisher-PCU PWB)	—	—	17	13	PCU	
RXD_LCC	Serial I/F data (LCC)	Serial I/F data (LCC-PCU PWB)	—	—	18	5	PCU	
RXD_SCN	Serial I/F data (Scanner control PWB)	Serial I/F data (Scanner control PWB - Controller)	—	—	9	45	SCN	
SCNSET	Scanner control PWB identification signal	Scanner control PWB installation detection	Scanner available		9	47	SCN	
SCOV	SPF cover switch signal	SPF cover open/close detection		Close	12	8	SCN	
SEG0	Operation panel LED matrix signal 0	Operation panel LED matrix	—	—	1	24	SCN	
SEG1	Operation panel LED matrix signal 1	Operation panel LED matrix	—	—	1	75	SCN	
SEG2	Operation panel LED matrix signal 2	Operation panel LED matrix	—	—	1	76	SCN	
SLEEP	Energy-saving mode display signal	LED lighting signal in energy saving mode		LED ON	9	15	SCN	
SLUMA	SPF tray lift-up motor control signal (Phase A)	SPF tray lift-up motor control (Phase A)	—	—	11	3	SCN	
SLUMB	SPF tray lift-up motor control signal (Phase B)	SPF tray lift-up motor control (Phase B)	—	—	11	4	SCN	
SOCD	SPF open/close detection signal	SPF open/close detection		Close	11	19	SCN	
⚠ SPED1	SPF document empty detection signal	SPF document empty detection	Paper present		12	12	SCN	
⚠ SPED2	SPF document detection signal	SPF document detection	Paper present		11	14	SCN	
SPFC	SPF paper feed clutch control signal	SPF paper feed clutch control		ON	11	10	SCN	
SPFFAN	SPF fan motor control signal	SPF fan motor control	ON		11	11	SCN	
SPFMA	SPF paper feed, paper transport motor control signal (Phase A)	SPF paper feed, paper transport motor control (Phase A)	—	—	12	13	SCN	
SPFMB	SPF paper feed, paper transport signal (Phase B)	SPF paper feed, paper transport motor control (Phase B)	—	—	12	17	SCN	
SPFMO1	SPF paper feed, paper transport motor current control signal 1	SPF paper feed, paper transport motor current control	Power down		12	16	SCN	
⚠ SPFMO2	SPF paper feed, paper exit motor current control signal 2	SPF paper feed, paper transport motor current control	Power down		12	18	SCN	
SPFSET	SPF identification signal	SPF installation detection	SPF available		11	5	SCN	
SPLS1	SPF document length detection signal 1	SPF document length detection (Short)		Paper present	11	18	SCN	
SPLS2	SPF document length detection signal 2	SPF document length detection (Long)		Paper present	11	17	SCN	
SPOD	SPF paper exit detection signal	SPF paper exit detection	Paper exit		11	20	SCN	
SPPD1	SPF document paper pass detection 1 signal	SPF document paper pass detection 1	Paper present		12	10	SCN	
SPPD2	SPF document paper pass detection 2 signal	SPF document paper pass detection 2	Paper present		12	6	SCN	
SPPD3	SPF document paper pass detection 3 signal	SPF document paper pass detection 3	Paper present		11	13	SCN	
SPPD4	SPF document paper pass detection 4 signal	SPF document paper pass detection 4	Paper present		11	12	SCN	
SPWS	SPF document size (Width) detection analog data signal	SPF document size (Width) detection	—	—	11	16	SCN	
SRRBC	SPF resist roller brake clutch control signal	SPF resist roller brake clutch control		ON	11	6	SCN	

▲ : Feb. 9 2004

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
SRRC	SPF resist roller clutch control signal	SPF resist roller clutch control		ON	11	7	SCN	
START	LSU motor control signal	LSU motor ON/OFF	ON	OFF	22	7	PCU	
STLD	SPF document tray lower limit detection signal	SPF document tray lower limit detection		Lower limit	11	15	SCN	
STMPS	Stamp solenoid control signal	Stamp solenoid control		Stamp ON	1	48	SCN	
STRBC	SPF paper transport clutch control signal	SPF paper transport roller brake clutch control		ON	11	9	SCN	
STRC	SPF paper transport clutch control signal	SPF paper transport clutch control		ON	11	8	SCN	
STRRBC	SPF paper transport resist brake clutch control signal	SPF paper transport resist brake clutch control		ON	12	20	SCN	
STRRC	SPF paper transport resist clutch control signal	SPF paper transport resist clutch control		ON	12	19	SCN	
STSET	Stamp identification signal	Stamp Yes/No detection	Stamp available		1	47	SCN	
STUD	SPF document tray upper limit detection signal	SPF document tray upper limit detection		Upper limit	12	14	SCN	
SYNC	LSU horizontal sync detection signal	LSU horizontal sync detection (BD sensor signal)	—	—	22	29	PCU	
T1LUD	Paper feed tray upper limit detection signal (Paper feed tray 1)	Paper feed tray upper limit (Paper feed tray 1)	Upper limit	—	14	13	PCU	
T1LUM	Paper tray lift-up motor control signal (Paper feed tray 1)	Paper tray lift-up control (Paper feed tray 1)	Stop	Up	14	1	PCU	
T1PED	Paper empty detection signal (Paper feed tray 1)	Paper presence detection (Paper feed tray 1)	Paper empty	Paper present	14	15	PCU	
T1PFC	Paper feed clutch control signal (Paper feed tray 1)	Paper feed clutch control (Paper feed tray 1)	Paper transport	—	17	4	PCU	
T1PPD	Paper pass detection signal (Paper feed tray 1)	Paper pass detection from paper feed tray 1	Paper pass	—	25	3	PCU	
T1PUS	Paper pick-up solenoid control signal (Paper feed tray 1)	Paper pickup solenoid control (Paper feed tray 1)	Roller UP	Paper feed	14	7	PCU	
T1SPD	Paper remaining quantity detection signal (Paper feed tray 1)	Paper remaining quantity detection (Paper feed tray 1)	—	Remaining paper quantity 66% or less	14	16	PCU	
T2LUD	Paper tray upper limit detection signal (Paper feed tray 2)	Paper tray upper limit detection (Paper feed tray 2)	Upper limit	—	14	21	PCU	
T2LUM	Paper tray lift-up motor control signal (Paper feed tray 2)	Paper tray lift-up motor control (Paper feed tray 2)	Stop	Up	14	2	PCU	
T2PED	Paper empty detection signal (Paper feed tray 2)	Paper presence detection (Paper feed tray 2)	Paper empty	Paper present	14	23	PCU	
T2PFC	Paper clutch control signal (Paper feed tray 2)	Paper feed clutch control (Paper feed tray 2)	Paper transport	—	12	3	PCU	
T2PUS	Paper pickup solenoid control signal (Paper feed tray 2)	Paper pickup solenoid control (Paper feed tray 2)	The roller lifts up.	Paper feed	14	8	PCU	
T2SPD	Paper remaining quantity detection signal (Paper feed tray 2)	Paper remaining quantity detection (Paper feed tray 2)	—	Remaining paper quantity 66% or less	14	22	PCU	
TANSET	Paper feed tray 1/2 (Tandem tray) detection signal	Paper feed tray 1, 2 (Tandem tray) insertion detection	Pull out	Insert	17	25	PCU	
TCBIAS	Transfer belt cleaning output control signal (ON/OFF)	Transfer belt cleaning bias ON/OFF control	ON	OFF	7	22	PCU	
TCBPWM	Transfer belt cleaning output control signal (PWM)	Transfer belt cleaning bias output voltage PWM control	—	—	7	18	PCU	
TCS	Toner density detection signal	Toner density detection	—	—	12	16	PCU	
TFSD	Toner remaining quantity detection signal	Toner hopper remaining quantity detection	Remaining quantity large	Remaining quantity small	11	11	PCU	
▲ TH	LCD temperature sensor signal	LCD temperature detection	—	—	1	93	SCN	
TH-CL	OPC drum cleaner temperature sensor signal	OPC drum cleaner peripheral temperature detection	—	—	8	12	PCU	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
⚠ TH-DV	Developing humidity detection signal	Developing section humidity detection	—	—	12	30	PCU	
TH-EX	Paper exit unit temperature sensor	Paper exit unit peripheral temperature detection	—	—	5	31	PCU	
THPS1	Transfer belt contact/ separation home position sensor 1	Transfer belt separation home position detection 1	—	Contact	7	6	PCU	Not used.
THPS2	Transfer belt contact/ separation home position sensor 2	Transfer belt separation home position detection 2	—	Contact	7	14	PCU	
TH-RA	Machine temperature detection signal	Machine temperature detection	—	—	21	10	PCU	
THV+PWM	Transfer charger output control signal (THV)	Transfer charger output control (PWM control)	—	—	15	8	PCU	
THV+REM	Transfer charger control signal (THV)	Transfer charger ON/OFF control	ON	OFF	15	9	PCU	
TLS	Waste toner pipe lock detection signal	Waste toner pipe lock detection	—	Lock (Tilt)	8	16	PCU	
TM1A	Toner motor 1 control signal	Toner motor 1 ON/OFF control	—	—	11	1	PCU	
TM1B	Toner motor 1 control signal	Toner motor 1 ON/OFF control	—	—	11	3	PCU	
TM2A	Toner motor 2 control signal	Toner motor 2 ON/OFF control	—	—	11	5	PCU	
TM2B	Toner motor 2 control signal	Toner motor 2 ON/OFF control	—	—	11	7	PCU	
TNCA	Waste toner full detection signal	Waste toner full detection	—	—	11	12	PCU	Not used.
TRC_LCC	LCC paper feed timing signal	LCC paper feed timing control (Output from PCU)	—	—	18	13	PCU	
TRMA	Transfer roller 15 drive motor control signal (Phase A)	Transport roller 15 drive motor control	—	—	10	17	PCU	
TRMB	Transfer roller 15 drive motor control signal (Phase B)	Transport roller 15 drive motor control	—	—	10	19	PCU	
TRMXA	Transfer roller 15 drive motor control signal (Phase /A)	Transport roller 15 drive motor control	—	—	10	18	PCU	
TRMXB	Transfer roller 15 drive motor control signal (Phase /B)	Transport roller 15 drive motor control	—	—	10	20	PCU	
TSGOUT	Toner den misty sensor gain control signal	Toner density sensor gain control	—	—	12	20	PCU	
TURM	Transfer separation motor control signal	Transfer unit separation control	Stop	Contact/ Release	7	16	PCU	
TXD_CCD1	Serial I/F data (CCD)	Serial I/F data (Scanner control PWB - CCD)	—	—	1	63	SCN	
TXD_CCD2	Serial I/F data (CCD)	Serial I/F data (Scanner control PWB - CCD)	—	—	10	14	SCN	
TXD_FIN	Serial I/F data (Finisher)	Serial I/F data (PCU PWB - Finisher)	—	—	17	11	PCU	
TXD_LCC	Serial I/F data (LCC)	aerial I/F data (Controller - Scanner control PWB)	—	—	18	3	PCU	
TXD_SCN	Serial I/F data (Scanner control PWB)	Serial I/F data (Controller - Scanner control PWB)	—	—	9	8	SCN	
VCCW_SCN	Scanner flash ROM write protect signal	Scanner flash ROM write protect		Write enable	9	10	SCN	
VFM-BKL	Exhaust fan motor control signal (Rear left)	Exhaust fan motor control signal (O^3 exhaust, process section heat exhaust)	Max. force of wind	Stop	5	22	PCU	
VFM-BKR	Exhaust fan motor control signal (Rear right)	Exhaust fan motor control signal (Exhaust, duplex (ADU) section cooling)	Max. force of wind	Stop	6	17	PCU	
VFM-EX1	Exhaust fan motor control signal (LSU top plate front side)	Exhaust fan motor control signal (O^3 exhaust, process section heat exhaust)	Max. force of wind	Stop	5	4	PCU	
VFM-EX2	Exhaust fan motor control signal (LSU top plate center)	Exhaust fan motor control signal (O^3 exhaust, process section heat exhaust)	Max. force of wind	Stop	5	10	PCU	
VFM-EX3	Exhaust fan motor control signal (LSU top plate rear side)	Exhaust fan motor control signal (O^3 exhaust, process section heat exhaust)	Max. force of wind	Stop	5	16	PCU	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
VIDEO	Image signal	Image signal to LSU	—	—	20	21	PCU	
VIDEOin-	Image signal	Image signal from controller to PCU PWB	—	—	9	21	PCU	
VIDEOin+	Image signal	Image signal from controller to PCU PWB	—	—	9	23	PCU	
VPMA	Paper transport motor control signal (Phase A)	Paper vertical transport motor control (Phase A)	—	—	10	21	PCU	
VPMB	Paper transport motor control signal (Phase B)	Paper vertical transport motor control (Phase B)	—	—	10	23	PCU	
VPMXA	Paper transport motor control signal (Phase /A)	Paper vertical transport motor control (Phase /A)	—	—	10	22	PCU	
VPMXB	Paper transport motor control signal (Phase /B)	Paper vertical transport motor control (Phase /B)	—	—	10	24	PCU	
VRB	Laser power control signal	Laser power control	—	—	22	17	PCU	
WAKE UP	Reset trigger signal from energy-saving mode	Reset trigger from energy saving mode	Energy-save reset		9	11	SCN	
WHPR2	Dehumidifier heater power relay 2 control signal	Dehumidifier heater control	Relay ON	Relay OFF	19	18	PCU	
XH	Touch panel area identification signal (Vertical direction)	Touch panel area identification (Vertical direction) X axis	—	—	1	96	SCN	
XL	Touch panel coordinates signal (Vertical direction)	Touch panel coordinates identification (Vertical direction) X axis	—	—	1	46	SCN	
YH	Touch panel area identification signal (Horizontal direction)	Touch panel area identification (Horizontal direction) Y axis	—	—	1	45	SCN	
YL	Touch panel coordinate signal (Horizontal direction)	Touch panel coordinates identification (Horizontal direction) Y axis	—	—	1	95	SCN	

*1: Multi-stage tray vertical size detection

	Vertical size detection: Connector level				Paper size		
Multi-stage tray 1	M1SS1	M1SS2	M1SS3	M1SS4	AB series	Inch series	China series
Multi-stage tray 2	M2SS1	M2SS2	M2SS3	M2SS4			
1	L	L	H	L	B5	Extra	K16
2	H	L	H	L	A4 A5R	LT INVR	A4 A5R
3	H	L	L	L	B5R	EX-R	K16R
4	H	H	L	L	A4R	LTR	A4R
5	L	H	L	L	Foolscap	Extra	Foolscap
6	L	H	L	H	B4	LGL	K8
7	L	L	L	H	A3	WLT	
0	H	H	H	H	Tray not installed		

*2: Options

No.	CV_SIZE3	CV_SIZE2	CV_SIZE1	CV_SIZE0	Paper size
0	0	0	0	0	none
1	0	0	0	1	A3
2	0	0	1	0	A4
3	0	0	1	1	LT
4	0	1	0	0	B4
5	0	1	0	1	LG
6	0	1	1	0	WLT
7	0	1	1	1	INV
8	1	0	0	0	B5
9	1	0	0	1	Extra
10	1	0	1	0	A5
11	1	0	1	1	F4
12	1	1	0	0	A4R
13	1	1	0	1	B5R
14	1	1	1	0	LTR
15	1	1	1	1	A5R

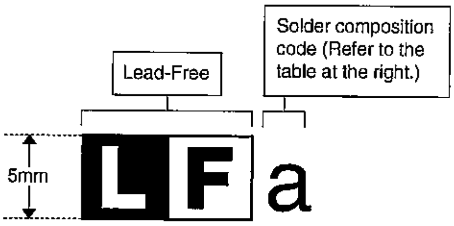
Memo

Memo

LEAD-FREE SOLDER

The PWB's of this model employs lead-free solder. The "LF" marks indicated on the PWB's and the Service Manual mean "Lead-Free" solder. The alphabet following the LF mark shows the kind of lead-free solder.

Example:



<Solder composition code of lead-free solder>

Solder composition	Solder composition code
Sn-Ag-Cu	a
Sn-Ag-Bi Sn-Ag-Bi-Cu	b
Sn-Zn-Bi	z
Sn-In-Ag-Bi	i
Sn-Cu-Ni	n
Sn-Ag-Sb	s
Bi-Sn-Ag-P Bi-Sn-Ag	p

(1) NOTE FOR THE USE OF LEAD-FREE SOLDER THREAD

When repairing a lead-free solder PWB, use lead-free solder thread.

Never use conventional lead solder thread, which may cause a breakdown or an accident.

Since the melting point of lead-free solder thread is about 40°C higher than that of conventional lead solder thread, the use of the exclusive-use soldering iron is recommendable.

(2) NOTE FOR SOLDERING WORK

Since the melting point of lead-free solder is about 220°C, which is about 40°C higher than that of conventional lead solder, and its soldering capacity is inferior to conventional one, it is apt to keep the soldering iron in contact with the PWB for longer time. This may cause land separation or may exceed the heat-resistive temperature of components. Use enough care to separate the soldering iron from the PWB when completion of soldering is confirmed.

Since lead-free solder includes a greater quantity of tin, the iron tip may corrode easily. Turn ON/OFF the soldering iron power frequently.

If different-kind solder remains on the soldering iron tip, it is melted together with lead-free solder. To avoid this, clean the soldering iron tip after completion of soldering work.

If the soldering iron tip is discolored black during soldering work, clean and file the tip with steel wool or a fine filer.

CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !
Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandoren.

(English) Caution !
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according to manufacturer's instructions.

(Finnish) VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
mukaisesti.

(French) ATTENTION
Il y a danger d'explosion s' il y a remplacement incorrect
de la batterie. Remplacer uniquement avec une batterie du
même type ou d'un type équivalent recommandé par
le constructeur.
Mettre au rebut les batteries usagées conformément aux
instructions du fabricant.

(Swedish) VARNING
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

(German) Achtung
Explosionsgefahr bei Verwendung inkorrekter Batterien.
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder
vom Hersteller empfohlene Batterien verwendet werden.
Entsorgung der gebrauchten Batterien nur nach den vom
Hersteller angegebenen Anweisungen.

CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)

"BATTERY DISPOSAL"
THIS PRODUCT CONTAINS A LITHIUM PRIMARY
(MANGANESS DIOXIDE) MEMORY BACK-UP BATTERY
THAT MUST BE DISPOSED OF PROPERLY. REMOVE THE
BATTERY FROM THE PRODUCT AND CONTACT YOUR
LOCAL ENVIRONMENTAL AGENCIES FOR INFORMATION
ON RECYCLING AND DISPOSAL OPTIONS.

"TRAITEMENT DES PILES USAGÉES"
CE PRODUIT CONTIENT UNE PILE DE SAUVEGARDE DE
MÉMOIRE LITHIUM PRIMAIRE (DIOXYDE DE MANGANÈSE)
QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA
PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE
AGENCE ENVIRONNEMENTALE LOCALE POUR DES
INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET
DE TRAITEMENT.

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